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Coliuria (Colibacilluria)

Chronic Infection of the Urine with *Bacillus coli communis*

WILLIAM BROWNING, M. D.
Brooklyn, New York

Explanatory

FOCAL infections and their sequels have received much attention. Many of these figure as complicating units. Best known sources are the teeth, gums, tonsils, sinuses, gall-bladder, intestinal canal and generative tract.

The urinary tract has also been in question, though less concretely. It is still customary to lump all urinary infections under one head, leaving coliuria indistinguishable if mentioned at all. The present study is concerned with observations on that phase.

As a working system with the principles involved developed gradually over a period of years, the matter can best be presented didactically, with a summary of illustrative cases. Such a system is applicable to cases of this origin in any line of practice.

Neuroses and even psychoneuroses, in considerable variety and more frequently than is realized, are due in whole or in part to infections or other chronic toxemias; and amongst these colibacilluria can claim a large place.

It is well known that various microorganisms may on occasion be passed in the urine by the kidneys without leaving tangible sequels,—merely transient bacilluria. "Bacteria may pass through the genitourinary

tract without causing a lesion thereof." (Chetwood, 1927).

Many have evidently in consequence jumped to the conclusion and clung to the faith that *B. coli* is innocuous in the urine, can pass galore as a chronic condition without recognizable effects. But such does not always prove to be the case.

For, in some circumstances, bacteria may establish a habitat in the tract. The most common of these loiterers is the colon bacillus. Any of the cocci (staphs or streps) may apparently be a complicating or even the main factor, at least for a time.

As J. D. Barney, of Boston, says (*J. Ind. State M. Assoc.*, 1931, p. 1909), "Colon bacillus infections are often apparently an entity in themselves." That this "entity" has been viewed as a possibly independent affection, at least at times, is further attested by the coining of such terms as colibacilluria and coliuria. Some understanding of this as a separate form of infection furnishes the best basis for considering its many complications. These facts bespeak it a place in nosology. The large number of persons affected with this condition, its occurrence in practically all lines of private and institutional work, its existence in numerous cases as a malady *sui generis*, and its serious though insidious

undermining of physical and psychic health, indicate its claim to recognition in systems of classification.

While *B. coli* or its products in abundance can give rise to clinical manifestations, other organisms are far less frequent in ordinary work and were rarely present in this series of cases, so any question of the relationships of such other infections can be left to those into whose care they happen to fall.

Micrococcus ovalis (enterococcus) occurred with *B. coli* a couple of times in this series, not enough for any conclusion regarding it, nor is it recognized as pathogenic.

No gonococcus was found in any case of this series.

Regarding infections in the genitourinary tract, and their complications, Dr. H. H. Young *et al.* very aptly say (*J. A. M. A.*, 1932, 98, 715-722), "The difficulty of completely eradicating infections of the genitourinary tract is due to the fact that the bacteria have penetrated so deeply that local treatment, whether of the urethra, bladder or kidney pelvis, usually fails to reach the depths of the infection". And naturally the longer it lasts the deeper in it has a chance to penetrate.

To what extent, however, the *B. coli* produces destructive or organic lesions in the tract is relatively immaterial to the present study. Nor is it any cystitis, pyelitis, or the like, that gives the indication or is of first importance here. These, if present, merely show implication of the tissues. A little recognized principle in *coli* infection comes here into play. No good comes from dallying with the tissues as such. But, if the damage already done is not too great or the patient not too far gone, control of the infection allows the patient to recoup, and the tissues take care of themselves. In point of fact we can never make tissues or so much as a single cell, but only provide favorable conditions for them.

The onset and development of these *B. coli* cases are as a rule so imperceptible that no acute stage appears. By the time discovered they are chronic, and can best be so classed from the start. Beyond pertinent references (some 25), no attempt is made to review the literature. The statistical side is covered for the present by Young *et al.* (*loc. cit.*) and the data below from Dr. Derby.

The most common, most obstinate, most ignored, and *en masse* most important urinary infection is with *B. coli*. The reasons why it is little heeded are many—its slow course, lack of suggestive symptoms, masking complications, impotent therapy, failure to make cultures, difficulty of experimental confirmation, and variations with age. Such cases are listed all the way from irritable bladder and asthenia to "pure cussedness," *alias* dementia and dozens of other headings.

With this preface the subject can be taken up.

How to Discover These Cases

The following three-stage plan has proven satisfactory in both private and hospital work.

I.—Selection of Promising Cases.—The most striking and constant manifestation is nocturia, where this occurs 2-3 times a night or oftener. This may have continued for years. Diuresis may or may not be in evidence.

Recognition of this as a key-sign came from habitual inquiry as to sleep conditions, since writing thereon years ago. An exception to this was an old prostatectomy, with coluria but no nocturia. But any postoperative or scar tract-case suggests itself. Common causes of nocturia, though not precluding infection, should be discounted, such as—very acid urine, block and retention, nephritis heart disease, arteriosclerosis, dia-

betes, nervous factors, irritable bladder, hysteria, insomnia. Hypertensive states, however, show polyuria more than nocturia. Other causes are intake of much fluid late in the day, as by beer drinkers and tea bibbers, diuretics and ingestion of irritative condiments, lowering of atmospheric temperature, as in autumn, incontinence, paralysis, stupor, the contracted bladder of late life, vesical ulcers (Deming) or other such stimuli, and especially urinary infections, as with tuberculosis of the tract, or as in the present type.

II.—The next step is to select the cases that show cloudiness of the urine *when properly examined therefor*. The specimen must be looked at when just passed, before any cooling, in a clean and clear warmed glass container, and by strong transmitted light, direct sunlight being by far the best.¹

The view, somewhat common even with technicians, that *normal*, just-passed urine may be cloudy does not hold. Observation in hundreds of cases shows on the contrary that fresh, normal, uncooled urine is never turbid². Of course dark color, mucus, poor light, faint haze in the specimen, dust or other foreign material, may render samples unclear. While in such the inspection may not with certainty indicate the cause, the appearance is abnormal and calls for investigation. But, as a rule, the diffuse opalescence of bacteria and pus is unmistakable. Any questionable cases are worth further testing, as an occasional one proves positive. While a clear urine may perchance carry a few *coli*, it is not of pathologic moment.

III.—Finally, a properly gathered uncontaminated specimen of the urine is sent to the laboratory for culture and determination of the existence of an infection, as well as of the organism or organisms responsible.

Sometimes the suspicion proves unfounded, though it is not an instance of "many are called, but few are chosen". Culture of a second specimen has twice proven successful.

Scrupulous care is requisite in gathering and handling urinary material for culture. Aseptic catheterization, especially in the female, keeping the specimen cool, and prompt transfer to the laboratory are in order. Males if possible are sent direct to the laboratory to secure a proper sample. Contamination of the specimen at any stage has to be carefully guarded against. As the skin of the pelvic region always harbors *B. coli*, the occurrence of an occasional colony of this form is to be expected, but it is discounted by the experienced bacteriologist.

With all the facilities at present available, there need be no uncertainty in the diagnosis, an item of prime importance. And the culture should always be held for further directions.

Pyuria: If the history reports pus in the urine, culture usually finds an organism. Experimental results from irritants do not apply in daily practice. *B. coli* is a pus-forming organism, but usually not in large amount.

How This Infection Acts Harmfully: Complications

The effects of this condition are twofold, casual and toxic. (A) Mechanical, social and indirect (casual): In many, enfeeblement limits activities, notably in the open.

¹ The oft-copied paintings of Gerard Douw (1613-1675), David Teniers (Jr.?, 1610-94), Gabriel Matz (1615-1683) and their Dutch school show that examination of the fresh urine by transillumination was once a well-practiced art, though since sunk in desuetude.

² In my own work, only one partial exception, with a suspicious haze, was found, the urine showing a sp.gr. of 1030, high acidity, very few pus cells, many oxalate crystals, floccules of mucus, and by culture "*Staphylococcus aureus*, 8000 per cc."

Indirect injurious effects are common: inconveniences, discomforts, cold extremities, chilling, and general dystonia.

In a few there is irritation, smarting ardor and a sense of acute annoyance from the vesicovaginal region.

Disturbed sleep, from frequent nocturia, wears out the robust and accounts for some of the irritability. Most of these things are worse in cold weather.

Incontinence, with all its complications, may be added, more pernicious in the stupid and unconscious than in the alert. Social limitations, which it may entail in the sensitive, contribute. Anemia, anorexia, exhaustion and faulty diet figure in a few.

Some suffer less from such things, others more, but all wilt in time.

Domestic Trouble.—Threatened marital rifts in the cases of two women with coluria (coitus painful) were happily averted by timely cure of their coluria. Redewill says (*Urol. and Cut. Rev.*, 1931, 35, p. 622), "These cases may be extremely serious not so much from the pathologic point of view, as from the disturbance of domestic relations. In the majority of cases it can be traced directly to a colon flareup".

(B) **Toxemia.**—As blood cultures are generally negative in these slow cases, also the agglutinins in the acute stage, says Desgorges, the coli do not often get from the bladder into the circulation. Brief jumps in body temperature may mean such irrigations from bowel or bladder. Any slight but fairly continuous rise suggests continued toxic absorption. However, the intestine controls or restrains its toxic contents, the urinary tract lacks control or loses it. The view of some schools, that the bladder is a non-absorber, does not apply anyway in abnormal conditions.

Tissues attacked.—As typhoid was early listed among the antecedents of arteriosclerosis, and toxemias as major causes, *B. coli* might be expected to fall in the same class. But the evidence so far, from cured or chronic cases, runs quite to the contrary.

The systolic pressure is uniformly a trifle low, unless rarely from intercurrent causes. Accessible arteries remain reasonably soft. Nephritis is unusual, especially in straight vesical cases. Nor does this infection often precede arterial ruptures. Reversed investigation confirms this, as arteriosclerotic cases in plenty have shown no coincident coluria. Valvular lesions have not been a part of the picture nor would a chance case invalidate the rule.

The possibility that arteriosclerosis might follow as a late sequel is negated by the existence of coluria for years without trace of arterial change.

Bones, joints, connective tissue and dermal outfit do not appear specially sensitive to this influence. The adipose layer shrinks little. "Lumbago" but once, and then from strain. Arthrorheumatic pain or swelling rare.

The tissue effects noted by Desgorges, in his paper titled "Chronic Colibacillemia and its Manifold Manifestations" (*Practitioner*, 1932), are in consonance with my own observations, even with respect to the scarcity of nephritic phenomena.

Complications.—Added harm results from the concurrence of this and some other ailment in the same person, the other factor usually getting all the blame. There is a wide range, from the curable alternate trouble (hence as hopeful as a pure coluria) all the way to lasting organic change.

Doubtless the most common complication is with other genitourinary morbidities. This is so natural it needs little elaboration. Blockage, past operations, bougied strictures, neoplasms, etc., contributed to this

series. Pyelitis runs higher in old and upper-tract chronics. Some men with large prostates, however, keep free for years, as the prostatic secretion passes into the urethra, and hence may not infect the bladder.

Coliuria appears to be next most frequently associated with nervous disorders.³ Cases were found associated with paralysis agitans, tabes, epilepsy, old encephalitis lethargica, multiple sclerosis, multiple neuritis, dementia precox, dementia paralytica, and with senile, terminal and toxic psychoses, but never as yet with a cerebral hemorrhage apoplexy.

Nearly half the cases of true paralysis agitans prove to have coliuria. The motor agitation possibly starts the coli on the way to the urine. So far, though carefully sought for, complication with postlethargic parkinsonism runs much lower, age possibly accounting for the difference. Treating the coliuria here greatly eases the course of the paralysis agitans. In two coluriarias that responded favorably, a diagnosis of incipient paralysis agitans had been made by neurologists. Neuromyositis, as shown by tenderness of large muscles, notably of the calves, is frequent at some stage of severer cases, and subsides regularly as they recover—evidence of neural involvement. Pronounced multiple neuritis is seen in some, though not uniform in type.

Urinary infection in tabetics has long been known, favored by vesical anesthesia with sequent dilatory habits and retention.

A few cases of *B. coli* meningitis have been reported (5 by Neal, *Am. J. Med. Sc.*, Nov. 1926, and 1 by Vonderahe & Baurichter, *Ohio S. M. J.*, May, 1931).

A check-up, based on selection and cultures in 822 fresh admissions, very kindly supplied by Dr. I. M. Derby, pathologist of the Brooklyn State Hospital, showed that 2.7% were thus affected. Further examination and cultures would, he thinks, raise this rate. In wards where infirm chronics accumulate, the proportion runs higher. These figures and others raise the query whether the total number of such cases in the whole population, including institutions, is not greater than that of any other chronic morbidity. Just another instance of "familiarity breeds contempt."

These combinations bring up three questions: (a) Does this agent have a selective preference for nerve tissue? While this accords with the facts, various infections and other toxemias cause neuroses. (b) Which factor, if either, is primary? Each is such at times. Chronology may decide. But diplogenesis here imperils progress. (c) What is the effect of treatment of one on the other? Control of the nervous condition will not cure the coliuria. But timely cure of the coliuria remedies many neuroses, though not settled organic nervous disease.

Origin of Infection and Route of Invasion

Coli are constant inhabitants of the intestine and ubiquitous about the pelvic exterior. M. F. Campbell ("Infections of the Kidney," p. 239)⁴ says, "The routes of invasion are the same in infants and adults—hematogenous, orogenous, lymphogenous, direct extension". Young finds his statistics indicate that certain organisms gain access preferably by one route, others by some different path. Route ratios, however, vary much with age.

One form of infection may pave the way for others, *B. coli*, according to urologists, joining or crowding out more virulent organisms. Two general routes include

³ Desgorges says, "Its effects in hepatic pathology are in no way inferior to those in the urinary domain." Evidently much depends on class of cases.

⁴ M. F. Campbell, *J.A.M.A.*, 1932, 99, p. 2231, also says, "Infection of the urinary tract . . . is one of the commonest diseases of children."

the channels by which coli gain the tract⁵:

(A) Lower Route.—Ascent by the urethra; irruption of adjacent foci; operations or manipulations about the pelvis. Catheterization, for example, even by the expert, can, in the enfeebled, cause infection,⁶ though the vigorous go unscathed (*v. also infra*, under sexual considerations).

In lower route infection, including that by contiguity, the kidneys are not usually involved until later, if at all, and then not always on both sides coincidentally. Nor can urinary stasis be a major cause or males would predominate, though retention by increasing absorption is doubly injurious. Other lower route causes include traumatism, masturbation in the female, parturition, suprapubic and perineal drainage. Cases in practice show that in the active years, barring blockage, ingress is usually by the lower route, hence less kidney involvement, better curability, and fewer relapses.

(B) Upper Route.—Here the intestinal supply of coli is perennial, with ample chance for both reinfection of the tract and active involvement of its kidney portion. Intestinal disturbances act as feeders. Constipation, colitis and relaxed tissues of advanced life are factors.

This path may be by the blood-stream and the kidneys. An alternate shorter path via abdominal lymphatics (proximate adhesions after peritonitis, operations, etc.) seems less frequent and less known.

Though coliuria needs prompt remedying, a complete urological examination is not always practicable, nor always necessary, nor always devoid of risk. Ureteroscopy through infected tract may extend it upwards. Age, kidney involvement and reinfection are a triad of handicaps.

Coliuria occurs at any time of life from infancy on, and in each sex, though more common always in females. As the care of these cases in childhood falls to others a couple of citations may suffice. Pugh says (*Med. Times*, August, 1929, p. 218), "Kidney infection in young girls is common, and to many it seems a mystery. In boys it is rare. There is nothing obscure in this, it is simply a colon bacillus infection from the rectum."

At the height of the growth-limiting celiac disease of young children, coli have been reported as abundant, or again as vastly less numerous in the intestine.

Complications and exhaustion increase with the years. Hence, while lower-route cases must occur at about the same rate all through life, the upper-routers increase until they seem the whole thing.

Sexual activities play a rôle, more in the female from her receptive part in the act. Increased infection in women is also attributable to the shorter urethra, to local diseases and procedures, including obstetric, and to prolapse of bladder or uterus—lower-routers. Abdominal ptosis adds to the incidence.

Various lines of natural resistance aid immunity. Mechanical restraint by the epithelial layer aids defense, as at the surface. Free discharge keeps reducing them. Acidity of urine makes that an uncongenial pabulum. Curative action of vaccine seems to confirm the idea of innate immunity.

In the human, immunity to poliomyelitis and typhoid increases as life progresses—which diseases are exogenous in origin. Quite the opposite holds for *B. coli*. It

is practically endogenous, however it reaches the tract. And in a general way immunity to it decreases with advancing years. Coli, as a constant inhabitant of the body, may weaken the barriers. Correspondingly, when residence is once established in the tract, spontaneous recovery, at least in the adult, rarely if ever occurs. Evidently, normal immunity to coli can be "only skin deep". Desgorges thinks it decreases with attacks of coliuria.

The only instance of heredofamilial tendency to coliuria was where three cases occurred in scattered branches of one family, all in women from 21 to 88 years of age, and all recovering.

Many years ago a German raised the query whether *B. coli*, presumably in the intestine, might be the major cause of senile involution in the human. While true of individuals, as in coliuria, any wider trend is uncertain.

Another question in the relation of the lowly coli to man, in the case of such an habitual fellow-voyageur, is whether the advantage is all on one side? Or is it not a symbiosis and in some way advantageous to the human carrier?

Coli soften fecal masses and make gas, thus favoring bowel discharge.

Arteriosclerotic nephritis and arthrorheumatoid effects are rare, even in old coliurias. That such conclusions were reached independently by Desgorges and the writer attests their verity. How to apply the principle in the control of arterial hypertension and hypotension is a problem.

Coli are also credited with the ability to supplant more virulent organisms in places where accessible. Whether coli follow as scavengers or are actually dominant, as assumed, are questions for the laboratory. Such dominance of coli must be related to its control of sclerosis. And are coli in the intestine similarly influential? G. H. Browning ("Chronic Enteric Carriers", 1933, London) reports that his use of a strain of coli to fight intestinal organisms was not very successful, at least as shown by typhoid bacilli in the urine.

Treatment of Coliuria

It is recognized, and by good authorities, that we are little qualified to fight *B. coli* successfully. Older methods, or those good in other infections, are woefully inadequate here. It is in order, consequently, to seek further aid.

The contrast of success and failure in consecutive cases is at times most puzzling. Difference in strains of coli hardly explain where the vaccines are autogenous. Instances of apparent divergence in results have occurred where the vaccines had the same preparator. Some returns suggest that not all technicians are equally experienced.

But by a review of experience covering a period of years a fair degree of order comes out of the seeming chaos, most of the discrepancies adjusting themselves along intelligible lines, with a prospect of cure in a definable share of cases.

Curative methods and adjuncts can be outlined as follows:

1. Nature's Method.—Individual immunity and spontaneous throwing off of infection, in established cases, rarely if ever effects a cure, unless in childhood.

2. Free intake of fluids.—This favorite plan aids little. In fact, to reduce night calls, it is better to limit all such intake late in the day. In the first half of the

⁵ Frank Kidd, "Common Infections of the Kidney with the Colon Bacillus and allied Bacteria," 1920, London, pp. 165-200.

⁶ Some old codgers daily jab up a not too clean catheter. Such chaps soon have an infected urine; perhaps also a "tanned" tract.

day, fluids may serve to wash out loose noxious material—symptomatic aid without curative action.

3. Laxatives and diet.—An old and common practice, often of some use as adjuvants.

As constipation aggravates things, and intestinal fermentation tends to force coli by some route over into the urine, keeping the bowels open is a prime indication. Apparent cures have even been reported from a few doses of castor oil in children.

Redewill (*Urolog. & Cutan. Rev.*, 1931, 35, p. 622) says, "Clearing up of absorption of toxin from the colon aids also materially in correcting non-specific infection of the urinary tract." Rarely, on the contrary, the bowels are too free, and may need bismuth or the like.

Diets are in vogue. But, to stand the long drain nourishment must be kept at the peak—unless to modify fermentation and urinary reaction. Value of a ketonic diet in acidifying urine and in "bacteriostatic" effect on the coli content has been shown by A. P. Fuller, Ph. D. (*Lancet*, Apr. 12, 1933). A banana diet is also said to limit intestinal coli.

Salines and hydragogues act as antiabsorbent laxatives. Treatment favored by modern French writers (Gaehtlinger, "Infection intestinale Colibacilloses urinaires", 1932, Paris), such as milk and vegetables, mineral oil and mineral waters, with vaccine orally, is directed chiefly to intestinal involvement and nephritis, and is ameliorative of coluria.

4. Local Mechanical Measures.—Relieve obstructions and retention, if present. Current methods of artificial drainage will infect a free tract. Irrigation, flushings with antiseptics even to the kidneys, prostatectomy including the newer electric technic, at best only check a coluria. Bacteriophage can be tried by injection into affected parts of the tract.

5. Urinary Antiseptics by Mouth.—No agent of this kind has proved entirely effective. They rarely check and never cure—mere fodder for coli. Methylene blue reduced the growth and toxicity of the coli, but never cured, and in a few was devoid of effect. The explanation of this is given by the following report of Dr. Eggerth of the Hoagland Laboratory under date of Oct. 21, 1932: "In urine made slightly alkaline, methylene blue neither killed nor inhibited growth of *B. coli*, even in a concentration of 1 to 1000. In urine at its natural slightly acid reaction, methylene blue inhibited growth of *B. coli*, in a dilution of 1 to 20,000, but dilutions of 1 to 1000 did not kill."⁷

Its superiority here⁸ to most of the favorites may be due to its cumulative action as a dye (chemotaxis). Other dyes, as acriflavine, have been less tried. The old empirics, buchu, uva ursi and hyoscyamus, occasionally afford slight subjective relief.

6. Autogenous Vaccine.—Opinions of its value here vary greatly.

Campbell (loc. cit., p. 176) finds "Vaccine therapy of no value here." Farbach (*South. Med. J.*, Feb., 1931) accords them some value. B. Vincent (*Am. J. Med. Sc.*, March, 1932) is enthusiastic about his special oral vaccine. Such differences of opinion may depend on any one or more of several factors.

Most of the methods mentioned merely reach the tract-surface and fail to penetrate. To do this and in-

crease resistance vaccines seem specially indicated. Aside from the enfeebled and those with intractable complications, autogenous vaccines have in the present series given by far the best results and many lasting cures.

In giving this vaccine it is well to follow directions from the laboratory where prepared, and to proceed with care, system, asepsis, gradual increase of dosage, and no postponement just because the patient feels better, or dislikes injections, or the urine clears. Such a course takes some weeks, at 3-4 day intervals.

Neither logically nor factually does it appear that this vaccine affects coli in the blood or the intestine.

When the injected fluid is not diffused by gentle massage, the spot may be sensitive for a few days. No abscess has occurred. The present strength of the autogenous vaccine used is estimated at two billion dead coli per cc. It can be used stronger, and has been weakened in the young.⁹

It takes several days for tests, cultures and production of vaccine. Further time elapses, one to several weeks, before abatement of either coli or toxemia is evident. It is folly to wait until the patient is *in extremis*, as in two institutions death of patients occurred before the plan could be carried out.

The question of where and on what tissues the vaccine acts can be left to the laboratory. Under some conditions it might best be injected directly into the tract.

Abstracts of illustrative cases are appended. Their after-course has been followed for from one to ten years and more to determine permanency of results.

Case I.—Mrs. L., 30 years old, slight build. Nervous, prossexual stock. For years frequent urination, nocturia 2-3 times, anorexia, bowel gas, low backaches. "Always tired, awfully nervous". Married now two months. Hasty, frequent and at times involuntary urination. Nocturia worse. Distress, pain and burning in the pelvic region. Discomforts accentuated and intolerable at voiding. Coitus now too painful¹⁰. Indecision.

Cold hands. "Wobbly" on feet. Arms "fall asleep" easily. Weight 95 lbs. Flushes. Pulse 90-100. Systolic pressure 111. Cries continually from the torture. Activities impossible.

Culture of urine showed pure coli infection. Complete, fairly rapid and lasting recovery from a course of autogenous injections by hypo.

II.—School girl of 13 years, seen with the late Dr. H. F. Williams. Large and vigorous, except for constipation and leukorrhea. An auto trip of 400 miles on September 4-5. Vaccination on September 11; ran normal course. Onset of a severe poliomyelitis with quadriplegia on September 23. On 24th catheterization for retention. To avoid carrying infection by working through leukorrheic field, scrupulous care was taken. The polio soon began to subside, and needs no special description. On Oct. 10 a coli infection of the urine was found. The standard course of irrigations and antiseptics locally and internally was industriously pursued. But improvement in all respects practically stopped. Still a slight rise in temperature; prostration; irritability; constipation; nocturia; muscles too weak for sitting.

Late in November the use of autogenous vaccine was started. Her condition soon began to improve in all

⁷ Helmholtz, in using methenamine, finds the reaction likewise important (*Proc. Staff Mayo Clinic*, 1932, 7, p. 274), but on a different basis, as methylene blue is not apparently changed in acid urine, while methenamine gives off formaldehyde.

⁸ Dr. W. H. Ross, of Brentwood, from long experience, has the fixed rule of giving an acidifying agent when administering any urinary antiseptic.

⁹ To be recalled also is its recent wide use as detoxicant.

¹⁰ Duke (*Arch. Int. Med.*, Feb., 1930, pp. 234-5) produced therapeutic fever by subcutaneous or intravenous injection of colon bacilli, "even if given in doses as small as 10,000."

¹¹ Pugh says (loc. cit., p. 219), "When the urine carries the colon bacillus or other irritants, a marked infection of the vagina may occur." Evidently in this case there was a flaring up from marital relations.

ways. The coluria disappeared. Colitis and membranous vaginitis were remedied. By the end of December she could use a typewriter and walk across the room. By April she was out walking. Returned to school in the fall. When seen late that year only a slight weakness in one gluteal group remained—not known to her associates. Now, after a dozen years, she fills an important executive position with high credit.

III.—A young woman just graduated from college, where the final work, examinations and exercises completed her discomfiture. The trouble was said to have started in childhood from some sort of mutual masturbation in a group of girls. Since that time the urinary bother, notably nocturia, has kept up, culminating in her present status.

Very irritable and emotional. General weakness, nowhere localized. Quick and continuous tire. Inability to concentrate. Nocturia and disturbed sleep. Unable to participate in any activities. Spends most of time now reclining, and is on the verge of settled invalidism.

Somewhat anemic. Excellent general physique. Tendon jerks normal. Gait ditto. Some mental anxiety and depression.

Pure coli infection of the urine was found on culture. Autogenous vaccine was prepared here, and given by her physician in another city. The urine cleared. Recovery was complete and lasting. She has since married, has a healthy son of four years (uneventful confinement), and cares for her household.

IV.—Mrs. X., 40 years of age. Good physique. Married three years. Sterile. Gynecologic care the past year for pelvic and vesical complaints.

After a busy day, including some rail travel, she was attacked with so-called pelvic peritonitis. Intense pain. Nausea and anorexia. Temperature to 105 and great prostration. Later the gynecologist, Dr. Clarence R. Hyde, found a mass to the left of the uterus.

While the acute condition subsided slightly in a few days, the temperature varied up to 103, and sepsis continued with uncertainty as to the outcome. The urine was found supercharged with pus and *B. coli*, no other organism. Apparently the pelvic mass ruptured into the bladder, and slowly subsided. Autogenous vaccine was prepared, and a course of injections instituted. Under this the coluria, nocturia, fever and pain entirely subsided within a few weeks. Appetite, weight, strength and general health returned rapidly to normal. During the two succeeding years she has lead a very busy life of semi-public activity plus care of a house, and with no sign of break.

V.—Mrs. H., 52 years of age, housewife, sterile. Thinks she is two years past the menopause.

One September she became so fearsome, so obsessed regarding an apparently harmless neighbor, that the home was sold and she moved to a distance. This made but slight improvement in her vagaries. The following September she had a so-called breakdown, with pressure in the head, nervousness, and a tendency to suspicions. "I was taken with those illusions," mild but varied. At times depressed and inclined to cry.

First seen in December. Still has flushes and sweatings, coldness and paresthesiae of extremities. Weight 150 a year ago, now 140.

Appetite good. Some gas and constipation. Upper teeth out. Nocturia. Pulse 86. Systolic pressure 146. Hemoglobin 100%. Tendon jerks normal. Her trouble was attributed to menopause, absence of her traveling husband for long periods, and lack of associates.

By July of the next year her condition had grown worse, nocturia 2-3 times. The fresh urine was finely turbid, faintly acid, 1005, no albumin, but showed coluria on culture. She then had a course of 17 injections of autogenous vaccine. By September her weight was up to 156, pulse 78, systolic pressure 138, urine cleared, no nocturia, flushes rare.

The next 3-4 years she went along well. Then loneliness and fears that the nervous state might come back led her to return to her native place in the west.

VI.—Man of 64 years, lawyer-promoter. First examined August 30. His trouble began insidiously the previous April, though slight precursors went much farther back. No cause assigned, unless in part business reverses.

It started as a mild pain in the legs; extended to the shoulders early in May; and had been in the arms since June 1st. Much complaint of burning pain in the mid-line about two spines below the prominens. Some pain-stiffness at nucha and upwards. Occasional dizziness. Heavy cigarette smoker, but uses no alcohol.

No nocturia before this trouble, now 2-3 times a night. Diuresis every 3 hours.

Appetite normal. Bowels vary. Lately a little difficulty in swallowing. Weight since this trouble gradually dropped from 175 to 141.

Bald. Gray. Mentally clear. But, nominally for physical reasons, unable to look after his affairs as formerly. No special psychic depression.

Good dental outfit, no pyorrhea. Pupils equal, medium, and react to light. Pulse 95. Systolic pressure by dial 110. Later by column always 105-6. Cardiac sounds clear. Temperature 98.1 rectal.

Fresh urine shows shreds of fine material. Hands tremulous. Tender at base of left thumb. Cannot lift arms to horizontal. Gait stiff, and a bit difficult. Can walk slowly, on level, with feet a trifle apart. Tendon reflexes in all four extremities normal in number and force. No jaw jerk. Large muscles distinctly tender. General motor weakness and easy tire.

These marks indicated an extensive or multiple neuritis, corroborated by the outcome.

From mid-September to November 12, he had 15 injections of autogenous vaccine (at 4 day intervals, 1 up to 15 minims), with moderate, steady improvement. A degree plus rise in temperature the day after each injection. Became able to attend executive meetings. "He gets about much better, and has less discomfort. But is still unable to lift his left arm."

Within the next two weeks his improvement stopped, and he again had some pain in shoulders and arms. No nocturia, if late fluids were avoided.

As his condition did not progress, and the urine was not entirely free from coli, he was started late in December on a course of fresh autogenous injections, this time plus half-grain doses of methylene blue by mouth.

March 27 the bacteriologist reported "no more coli bacilli" in the urine. Weight 147. All his disabilities and complaints soon cleared up completely. He resumed a fair amount of activities for his years. The coluria never returned. He lived to be 75, and died (in a distant town) of some trouble said not to have been related to his long past urinary infection.

VII.—Man of 51 years, transit official. His trouble dated from August 2. Admitted August 17, with typical multiple neuritis, presumably alcoholic.

Good physique, well nourished. Mentally he seemed then intact. Early catheterization for retention. For two weeks he did fairly; then, as the

neuritis slowly subsided, he began unaccountably to retrograde.

Blood showed normal reds and hemoglobin. Leukocytes 14000, later down to 6000. Temperature variably up to 102 F. and once to 105. Blood culture sterile on Sept. 23. Became much disturbed mentally and unclear. Difficult to control. Loud raving at night. No fabrications, and still recognized familiars—a toxic psychosis rather than a Korsakoff syndrome. Hospital authorities most anxious to send him to asylum. Became a trifle quieter as he grew weaker, in fact one whole day in stupor. Doctors' views of his condition, at this stage, ranged from grave to desperate. Something evidently was blocking progress.

A marked coluria in acid urine was then found. Under autogenous vaccine per hypo, and methylene blue by mouth, he soon began to gain. The temperature stayed at normal. Urine cleared entirely, barring the blue. Mentality resumed its usual tone and acuity. Nights quiet and orderly. General condition fine. Discharged end of October. He risked immediate resumption of his post. And since then, now two years, has met arduous duties without a break.

VIII.—Man of 71 years. Chief engineer at a large plant. He fell down stairs a month ago, and was brought to the hospital. X-rays of the head were negative. Indirect reports suggested that slight mental changes, restlessness and inability may have preceded the fall. First seen on September 19. He gives a history of sciatica once or twice 10-12 years ago. "Rheumatism" last spring and last year, mostly in spine and lower extremities. Smokes 10-12 cigars a day.

Has excited periods that are on the increase. He does not at present recognize family or friends. He is not violent, but wants to keep walking and is intolerant of interference. Nights he is more disturbed and disturbing, and is with difficulty restrained. Hard to keep him in his room or even indoors. Gets noisy and wants to wander away. The hospital insists on transferring him forthwith to some insane asylum and is as difficult to restrain as is the patient.

Despite his years and ailment he is still vigorous. Temperature often rises to 100° F. and once to 102°. Systolic pressure 140. No dizziness. Spinal fluid clear and not under pressure.

At first he may seem mentally clear, but soon gets mixed in his conversation, and wanders to irrelevancies. Does not grasp accurately all that is said. Answers queries briefly, and often irrelevantly or not at all. Seeks to get out of bed. Right pupil a trace the narrower, and reacts irregularly. Knee-jerks and Achilles tendon normal. Left corner of mouth slightly relaxed.

The urine is acid, and shows fine cloudiness. Urination hurried. Nocturia. Culture shows coli abundant. Impossible to get from him any history to show whether the coluria antedated his fall.

Under injections of autogenous vaccine and methylene blue internally, his urine soon began to clear and his lucid intervals to lengthen. He returned home in a few weeks, his physician finishing the injections. No recurrence. He resumed his natural moderately active, independent life. Reports since from his old employer and pals agree that he has kept well, active and fully normal the three years since.

IX.—Mrs. M., 79 years of age, born in U. S., widow. Had only one child, now a healthy adult. The urine has long shown an excess of uric acid, and

a very slowly progressive nephritis; gradual loss of weight. All of this might tally with adjuncts of senility. But with this there has long been an increasing amount of pus in the urine, now a heavy pyuria.

With this of late there had developed a serious psychic disturbance, culminating in a complete mental upset. Times of excitement; active perversity, restlessness and a tendency to wander if strength permitted; nights disturbed and noisy; gestures of violence towards attendants; difficulty of control; entire obliviousness to former interests. Nocturia, often every 15 minutes.

The patient is in bed, exhausted and irresponsive. Ureterologic examination disclosed double kidney involvement. Both these pelvis were washed out with a mild silver solution, and the vesica likewise. There was a prompt, complete clearing up of all symptoms, lasting for a couple of days. Then the whole picture rather rapidly relapsed.

As culture of the urine showed an abundance of coli a course of autogenous vaccine, plus methylene blue internally, was instituted. This practically, but not quite absolutely, cleared the urine. It did, however, cure all her psychotic manifestations entirely and permanently for the rest of her life, to the great joy of her family. She could again sit up, and talk naturally. Partial return of coli and pyuria three months later. Fresh vaccine used, but with no appreciable effect. Death at end of year from the chronic Bright's.

X.—Man of 43 years. Came in January for "bladder trouble," dating from catheterization, 2½ years before, for "congenital" stricture. Condition acute the past six months. Bladder irrigation and massage of prostate did not aid. Then laid up three months with general weakness, vesical irritation, one chill, some fever, anorexia, bowel disturbances, pyuria, etc. Coli plentiful in acid urine. Also *Micrococcus ovalis*. Given autogenous vaccine two months. Much improved the six years since, though always some coli in urine. Regained normal weight. Urine does not burn. Nocturia once a night or none. Feels "pretty fair" always and able to steadily manage a busy office. Systolic pressure 102-110. Fewer colds than formerly. Summer he gets along without attention. Winters tolerable with methylene blue.

Review of These and Other Cases

The ten cases show the wide range in practice. Some are simple coluriyas; others had curable complications; and the last two were partially remediable.

Though not a large number, yet, picked at random, they give useful pointers. Of the 5 under 50 (4f, 1m.), none showed a psychotic trend. But, of the 5 over 50 (2f, 3m.), all but one at some stage showed mental signs. A minority, including all under 50, can be considered of lower-route origin; while of those above 50 years, only one, and that the youngest, came with like probability by the lower route. These facts support the conclusion that, aside from complications, lower-route cases are the more favorable.

Mental Accompaniments.—Systemic reactions to individual injections prove slight, unless a faint rise in temperature. But, though there is little pain or physical inconvenience, those past middle life incline to a mental twist. Traces in the younger pass unnoticed. Typical is the objector who balks at everything—medicines, injections, blue urine or courtesies. This

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Present Status of the Theory of Vascular Peristalsis As a Motive Factor in the Circulation

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THE theory that the blood vessels perform an active part in the carrying on of the circulation, instead of the merely passive rôle commonly assigned to them, has been before us for a number of years. It has not been accepted generally by the scientific world. Current text-books on physiology ignore it; they still teach that the *vis a tergo* of the contractions of the heart constitutes the intrinsic motive force of the circulation, occasional outside aid being given by contracting skeletal muscles and the respiratory vacuum; and that this cardiac *vis a tergo*, with the occasional outside aid referred to, pushes the mass of the blood through the ramifying arterial tubulation, through the capillary sponge, and through the ramifying venous tubulation, overcoming the friction of their extensive lining surfaces, and accomplishing the complete circuit in about twenty-three seconds.

The burden of proof rests on this new theory. Let us review briefly the argument in its favor, as it stands at present. This argument is based on *a priori* reasoning and on objective evidence. Natural science demands objective evidence, but some credit is allowed to *a priori* reasoning which makes possible hypotheses that facilitate scientific advance.

The *a priori* argument in favor of this theory has been discussed by the writer in previous publications.¹ He will here recapitulate some of its main points.

1. The physical conditions of the circulatory apparatus makes it difficult to understand how the cardiac contractions alone, or with the occasional outside help of contracting skeletal muscles and the respiratory vacuum, can move the mass of the blood through the vascular circuit in the time and manner in which it appears to be moved, against the friction in the arterial and venous channels and the capillary sponge. Moreover, the walls of some of the blood vessels seem too thin and weak to withstand without excessive dilatation the pressure of a *vis a tergo* which would be sufficient so to move the blood mass.

2. The behavior of the circulation in conditions of low blood pressure, as compared with its behavior in conditions of high blood pressure, seems difficult to explain on the old theory of the mechanics of the circulation. It seems in general that the circulation is carried on more easily or more effectively in conditions of low than in conditions of high blood pressure; which is hardly what we would expect if the cardiac contractions were the sole intrinsic motive factor.

3. The anatomical structure of the arterioles, which shows a comparatively large muscular equipment, suggests a peristaltic purpose, viz., to shove the blood through the capillary sponge. This muscular equipment seems more elaborate than would be necessary for producing simple variations in the caliber of the vessels.

4. The anatomical structure of the small veins, which resembles that of the arterioles, suggests a similar peristaltic purpose; and the fact that their muscular equipment is less in amount than that of the arterioles seems in harmony with the easier mechanical conditions of their circulatory problem.

5. Analogy with the alimentary tube favors the the-

ory of vascular peristalsis. The colon contracts, dilates and peristals. The arterioles contract and dilate—why may they not also peristalt? The colon may become spastic, with lessened peristalsis. Why may not the arterioles also become spastic, with the same result?—thereby throwing more work on the heart to maintain the circulation, and bringing about a condition of essential hypertension (as the writer has pointed out in a previous publication¹).

6. The behavior of the circulation in response to some therapeutic agents suggests support for this theory. How does digitalis relieve edema in conditions with a weak, dilated, but regularly acting heart, without, apparently, producing noticeable improvement in the condition of the heart? Can it be by diminishing vascular spasticity, and thereby permitting increased vascular peristalsis? How do heat and cutaneous irritation (as by the impact on the skin of carbonic acid gas bubbles in the Nauheim baths—which gas may also penetrate the skin) improve the circulation? Can it also be by diminishing vascular spasticity and consequently permitting increased vascular peristalsis, as well as by a more direct effect—instead of by simply causing passive dilatation of the vessels?

Now let us briefly review some objective evidence which seems to bear favorably on the question of vascular peristalsis.

Danzer says² that Schiff in 1855 observed "spontaneous contractions of the arteries in the rabbit's ear. He also found that they were peristaltic in character and proceeded from the base to the apex of the ear. The rate of contraction was different from that of the heart."

Starling in the third edition of his *Physiology*³ ascribed the tonus of the arteries to the "automatic activity of the muscular fibers themselves."

Luciani in his *Physiology*⁴ noted that "at the end of diastole the velocity is greater in the peripheral than in the central arteries."

Wilson in 1918 maintained that the anacrotic and dirotic pulse waves were peristaltic waves, the regular cardiac pulse wave being superimposed upon them; and he also maintained "that the systemic arteries and veins constitute peristaltic areas similar to the peristaltic areas in the bowel."⁵

Danzer reported in 1925 the following experiments.⁶ "If the bulbus arteriosus of the frog is ligated the heart gradually dilates. In about ten minutes the heart has more than doubled its size—the blood keeps moving in the capillaries for five or ten minutes after the aortic ligature."

"Injury to the vasomotor system or the application of vasodilators do not alone produce a very striking effect; the combination of the two procedures, however, paralyzes the peripheral vascular mechanism and prevents the filling and enlargement of the heart after aortic ligature."

Danzer concludes: "(1) The size of the heart after ligature of the aorta is an index of the intensity and function of the peripheral vascular mechanism. The

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Rectal Obstruction

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RECTAL obstruction is, of course, always a relative matter; a disproportion between the power of expelling the feces from the pelvic colon and rectum, and the resistances to that force. So many causative factors enter into the production of obstruction of the bowels and the predominance of individual symptoms varies so much according to the person afflicted and to the area of bowel involved that volumes have been written on this subject.

INEFFICIENT POWERS OF DEFECATION

Inefficient powers of defecation are to be suspected

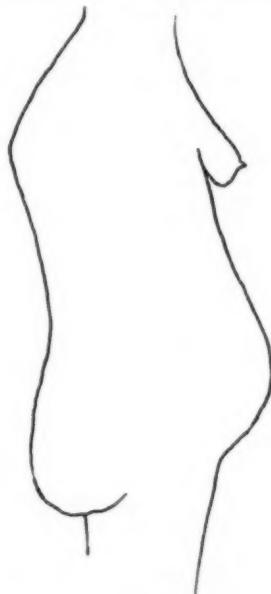


Fig. 1. Body contour of enteroptosis.

when constipation dates from pregnancy, or is associated with ascites, large abdominal tumors or obesity. It is often easy to ascertain the condition of the abdominal muscles by simple palpation in the horizontal position; and during the examination the discovery of a movable kidney or a dropped liver would also suggest that the abdominal muscles are weak. The patient should next be told to raise her head from the couch; the recti muscles contract and their strength can be ascertained, and any separation between them recognized. Finally, the patient should be examined standing up, when bulging of the abdomen below the umbilicus (Fig. 1) shows if visceroptosis is present and whether the abdominal muscles are weak. The patient often complains of abdominal discomfort which is relieved by lying down or by pressing the lower abdomen upwards.

In all cases in which a woman, whose bowels have previously been regular, becomes constipated after the birth of a child, the condition of the pelvic floor should be investigated, as well as that of the abdominal wall. The anus is normally slightly retracted; the retraction is increased and the anus moves slightly forward when the levator ani muscles are contracted by making the

movement which is required when it is attempted to restrain a commencing defecation. If they are weak, the retraction in the condition of rest is absent or diminished, and on contracting the levator ani muscles, the retraction and forward movements are slight or absent. On straining, the whole perineum projects further than it should do, and in severe cases the uterus may be more or less prolapsed; in such cases no further evidence is necessary to show that dyschezia is partly due to weakness of the levator ani muscles.

When constipation is present in asthmatic or very emphysematous people, it is partly due to the fact that the great rise in intraabdominal pressure required in defecation cannot be produced by contracting the diaphragm, as the latter is already as low as it can go.

ABNORMAL RESISTANCES TO DEFECATION

Abnormal resistances to defecation are of two types, 1. Functional obstruction, and 2. Organic obstruction. The latter strictures are of two types, benign and cancerous. In every case of constipation that does not promptly yield to ordinary measures a digital examination of the rectum should be made, and in cases of doubtful origin the rectum and pelvic colon should be examined with a proctoscope and sigmoidoscope.

Infants

Congenital stenosis of the rectum is rare but if occlusion is complete it must be immediately recognized and relieved or the child will die in a few days. Partial stenosis may give rise to no symptoms until the child is a year or two old and is put on solid food.

Children

In Hirschsprung's disease a kink usually develops where the dilated portion of the colon overhangs the

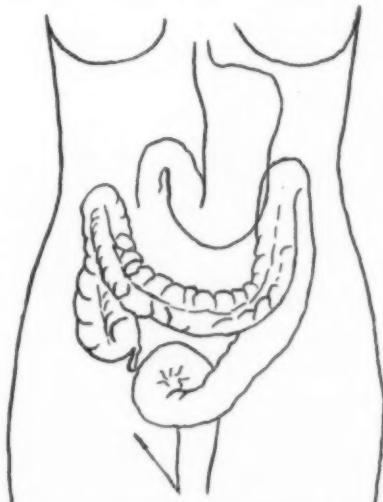


Fig. 2. Pivoted stomach and transverse colon.

undilated section. There is always a history of constipation dating from the first few months of life, although sometimes the bowels may be opened daily but insufficiently. Soon after birth the abdomen becomes greatly enlarged, the size varying from time to time.

The outline of the distended colon can be seen, and peristalsis is often visible. The abdomen finally becomes enormous; it is then tense and tympanitic. Attacks of obstruction occur and death frequently occurs before the age of eight years.

Chronic intussusception may cause symptoms similar to those produced by stricture; attacks of colic accompanied by visible peristalsis occur with increasing frequency and severity, and they are often brought on by food or aperients. An intussusception should be suspected under these circumstances when a sausage shaped tumor is palpable, especially if blood and mucus are passed at frequent intervals. In one third of the cases the apex of the intussusception can be felt on rectal examination.

FUNCTIONAL OBSTRUCTION IN ADULTS

A. Fecal impaction—This is probably the simplest type of obstruction, and may occur from hard feces, an enterolith or a ball of hair, lodged in the rectum, which requires abnormally strong peristalsis to carry it through the pelvic colon or rectum. Such masses arise from insufficient consumption of water, a common cause of constipation in women; or excessive loss of water by other channels such as a previous diarrhea, hemorrhage or excessive perspiration. This is one cause of constipation in diabetes. This condition can be recognized easily by a rectal examination, which shows that feces of abnormal hardness are impacted in the rectum. Foreign bodies such as fish bones, pins, needles or wood splinters may lodge in the rectum when they have been swallowed, and larger objects may have been introduced into the bowel per anum by the insane or those of perverted sexual or villainous intent. Thieves employ the rectum as a hiding place for stolen goods.

B. Spasm of the sphincter ani. When defecation is painful it is rendered difficult as well by reflex spasm of the sphincter ani. The anal canal and rectum should be examined after the mucosa has been cocainized, or if necessary under a general anesthetic, so that any local cause of the pain, such as an anal ulcer, inflamed hemorrhoid, inflamed crypt or foreign body may be discovered. In the absence of these, the genitourinary organs should be examined thoroughly for reflex causes of spasm. When constipation and difficulty in micturition appear simultaneously, the possibility of some organic nervous disease should be considered, even if no other symptoms are present.

C. Prolapse of the Rectum.—When a constipated patient, whose general health is so good that cancer seems improbable, complains that after defecation he feels as if something were still present in the rectum, or that the rectum comes out, especially if mucus and occasionally a little blood is passed, the constipation may be due to obstruction caused by invagination of the rectal mucosa through the anal sphincters. The condition is generally associated with lumbar pain. The everted mucosa can be seen when the patient strains as at stool.

ORGANIC STRICTURE OF THE RECTUM

In any case where there is doubt as to the trouble being acute obstruction or severe constipation a rectal examination should always be made. With organic obstruction the rectum is found empty; if it contains feces there may be obstruction due to fecal impaction, but it is exceedingly rare for this to produce symptoms at all comparable in severity with those due to acute obstruction and with this exception the presence of any quantity of feces would show that there is no organic obstruction. A growth in the rectum can be recognized easily, and sometimes a growth of the pelvic colon can be felt through the front wall of the rectum. In in-

fants, the end of the intussusception may be felt in the lumen of the rectum, and more frequently the tumor can be felt on bimanual examination. Obstruction due to pelvic adhesions can often be recognized by the presence of tender masses and the fixity of some of the pelvic viscera.

Fibrous stricture of the rectum is an occasional cause of obstruction, especially in women; it results from inflammatory infiltration of the submucous tissue secondary to infection of the mucous membrane. The condition is quite painful, and often associated with active inflammation and ulceration; it can be distinguished from malignant stricture by means of the proctoscope.

If there is a history of tuberculous or dysenteric ulceration, the possibility of obstruction due to cicatrization should be considered, though this is a very unusual occurrence. Hyperplastic tuberculous infiltration of the intestine, especially of the cecum, causes obstruction, but the tumor present is difficult to distinguish from cancer.

Obstruction of the iliac or pelvic colon may follow the pericolitis which results from the formation of diverticula in old people who have long suffered from constipation. This condition may also be indistinguishable from a growth, but the possibility should be borne in mind in the case of elderly patients with a tumor in the iliac or pelvic colon, when there is a long history of constipation; the sigmoidoscope may help in the diagnosis. If there is a vesico-rectal fistula in association with chronic constipation, it should be remembered that pericolitis due to ulceration of diverticula is a more frequent cause of this condition than is cancer.

Cancer is the most common cause of organic stricture of the colon or rectum and this possibility must always be considered when an adult individual, whose bowels have been regular previously, develops constipation of increasing severity without change of diet or habits, or when a patient who is habitually constipated becomes more so without obvious reason. The constipation of cancer is at first intermittent and may alternate with diarrhea; drugs become steadily less effective, and enemata, which at first give greater relief than drugs, also lose their effect slowly. A tumor is often not palpable in obese patients without the aid of an anesthetic. The tumor may vary in size, and even disappear after the bowels have been well emptied, because a mass of feces may become impacted above the cancerous stricture which is itself impalpable. Hence, although the presence of a tumor is an important aid in diagnosis, its absence or disappearance does not exclude the possibility of cancer; only when its disappearance under treatment is accompanied by complete and lasting cure of all symptoms can cancer be excluded. The tumor is hard, and cannot be altered in shape by pressure, as is the case with fecal tumors. Slight attacks of colic occur frequently, but they are not often severe until the obstruction is almost complete; the colic may be accompanied by visible and palpable peristalsis and spasmodic contractions of the intestines. The latter is a most important sign, as it never occurs in colic associated with lead-poisoning or colitis, and very rarely with obstruction due to fecal impaction. Progressive loss of weight and strength, anorexia and anemia are late symptoms, and it is important to make a correct diagnosis before they have appeared. The obvious presence of blood in the feces is an important sign, but it is often absent. Much more frequently traces are found which are only recognizable by chemical tests. In the absence of hemorrhoids and of hemorrhage from the mouth, throat or nose, the presence of occult blood in the feces is strong evidence that ulceration is present in the diges-

tive tract. In doubtful cases, a sigmoidoscopic examination should be made, as cancer is much more common in the rectum and pelvic colon than in any other part of the intestine, and may readily be recognized by this method of study.

Pressure on the rectum from without, with the production of dyschezia, may occur from a number of gynecological conditions, namely, the gravid uterus, which always produces some constipation, a distended fallopian tube, ovarian tumor, uterine fibroid or uterine cancer.

In the male it is not uncommon to encounter hyperacute inflammation of the prostate gland or seminal vesicles, in which case the patient complains of constipation or obstipation; in fact, such is the rule rather than the exception; but to find an obstruction of the bowel under these conditions is rare. In advanced carcinoma of the prostate or regrowth in the prostatic bed, the rectum becomes so obstructed that the movements of the bowels give us grave concern. Ritch¹ reports two cases of acute seminal vesiculitis in which the examining finger within the rectum met an obstructing mass of tissue in every direction as far as the finger could reach. This mass was squarely across the rectal canal, quite firm and resembled much a taut curtain drawn across the lumen of the gut.

Mrs. P., age 70, noticed frequent evidences of blood in the urine. Sometimes the urine seemed almost whole blood. There was also some strangury. Cystoscopic examination showed a lobulated sessile growth on the left posterior wall of the bladder. When first examined its base was two and a half inches in diameter, circular in outline, and the tumor was dome-shaped. It spread rapidly and within three months so filled the bladder that the cystoscope could not be used. The bladder mass filled the vagina and examination was excruciatingly painful. The neoplasm shortly thereafter sloughed into the vagina and the fistula relieved the suffering, but the tumor increased in size to that of a cocoanut and so obstructed the rectum that evacuations were obtained only by enemas and these were very distressing.

REFERENCE

1. Ritch, C. Otis, Intestinal Obstruction caused by acute seminal vesiculitis. *Jour. of Urology*, Vol. XXII, No. 3, Sept., 1929, p. 293.

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Coliuria

(Concluded from page 267)

may start before treatment, or get worse at first with it. Important to forestall this kink, if possible, lest it block success, as a cure over-night is not to be expected. This quirk is closely allied to the following psychic bent.

Some of the oldest patients with coliuria have a special type of common or equivalent symptoms. Included are Cases VIII and IX above, with at least 6 more, all over 70 years of age and in part 80 or plus (6f, 2m). Desgorges, under nervous symptoms, mentions irritability, uncertain temper, mental depression, insomnia, asthenia, etc.

No one case is likely to show all the anomalies, amounting to reversal of personality, at least as to conduct and bearing. A genial person becomes perverse, grouchy, cranky, irascible, disgruntled, more or less reserved and hard to approach, opposed to everything. "Thinks we are all against her." Abusive if disturbed. "She could not cooperate in any way." They become distrustful, suspicious and fearsome. A kind, devoted wife "sasses" her husband, and "worries the life out of him." Often dowdy and

unable to care for themselves. May act threateningly when crossed. Turn against those dearest to them. No appeal to reason or obligation avails. Have no insight, no realization, no desire to be again normal, no willingness to do anything to recover. Manifestations may be much modified in the enfeebled and institutionalized, unless still uneasy, dissatisfied and inclined to wander.

This status can lead to all kinds of family and social mix-ups—bickerings, tilts, feuds, breaks in friendship, marital separation, loss of attendants, hermitage, lapses, strange violence, wasting of funds, etc. Yet a mild, unsuspected ambulatory victim can sometimes put up such an apparently normal front that no judge or jury will call him non compos.

To such a degree can these evils extend that the causative microorganism might well be termed the bedeviling microbe, or *devil bug* for short. Age, plus devil-bug in the urine, can play the mischief!

These cases may have been listed under senile melancholia or the like. But both the distinctive features and some cures by treatment of the coliuria serve to differentiate them. Typical cases are rather easily spotted.

Summary of Present Therapy

Initial aids and adjuncts are noted above.

In persons up to 50 years of age, with not any or only transient complications, and usually of lower-route ingress, coliuria is amenable to autogenous vaccine.

Similarly, in persons up to 65-70 years, cure usually follows the use of methylene blue internally, plus vaccine by hypo.

Later in life upper-route invasion tends to prevail, and the trouble to be more obstinate. Partial and even complete success is still possible, much depending on the individual's vigor. The great mass of the untidy, bed-ridden, sub-mental and like derelicts with coliuria are less promising, and largely an institutional problem.

After-Care.—A generous diet, preferably ketonic. Circulatory support.¹¹ Anti-depressants (thus excluding most sedatives). Guarding against recurrence. Slow resumption of activities.

Further facts, new alignments, modified conclusions will be in order. But there is an immediate chance, in this time of stress, for various lines to extend useful work.

Acknowledgments.—This work was started, over twenty years ago, under the guidance of Dr. Archibald Murray, long chief pathologist of the Hoagland Laboratory, who was appealed to for help or advice in these trying cases. It has since been continued with the aid of his successors. To be mentioned also are the late Dr. Paul M. Pilcher, accomplished urologist, and Dr. Hala, pathologist of Kings Co. Hospital.

¹¹ Many moderns foolishly give up coffee, or toy with substitutes, though to dynamics even a demi-tasse of the clear black before rising is invaluable.

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Rapid Typing of Pneumococci

A rapid typing for pneumococci that would avoid the present clinical delay is currently reported by Drs. R. H. Sia and S. F. Chung (*Proc. Soc. Exper. Biol. & Med.* 29:792 [April] 1932) of the Peiping Union Medical College. The Sia technic consists in plating the clinical material on type-specific antiserum-agar, that is, on dextrose-agar plus from 1 to 5 per cent of type-specific anti-pneumococcus rabbit serum. The homologous type pneumococcus colonies growing in the depths of this medium show annular opacities or local precipitin reactions surrounding each colony. The development of these annular opacities is allegedly strictly type specific.

Pruritus Ani—Clinical Considerations

CHARLES GOLDMAN, M. D. AND WILLIAM LIEBERMAN, M. D.

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THE etiology and therapy in this common and exceedingly troublesome condition of pruritus ani remain complex and probably somewhat confusing to those who have not followed the subject. A number of etiologic factors are accepted generally. In addition there are theories ascribing the great majority of cases to some single cause, each theory with its outgrowth of therapy. There are some cases which fit each of these theories accurately, but no single theory with its etiology and therapy applies to all cases of pruritus ani. Each case must be considered individually.

It is our purpose simply to offer some practical clinical observations regarding the etiology, and the therapeutic measures which we have found helpful, for which no originality is claimed.

We use pruritus ani to mean an intractable perianal and anal itching from a known or unknown cause, characterized by periods of spontaneous relief and by recurrence. This definition is accepted by most authors although a distinction is sometimes drawn by some of them, who apply the term only to those cases where the itching has ceased to be merely a symptom and the condition has become a disease entity. In these cases the symptoms persist after the cure of the original cause or where the original cause cannot be found. This persistence is attributed to changes in the skin, particularly in the sensory nerve ends, following a long period of scratching. The distinction is of academic interest only as it is impossible in most cases to differentiate clinically whether the itching is still merely a symptom or has already become a disease entity.

When the etiology cannot be found, the term idiopathic pruritus ani is used. The inciting cause is probably present but undiscovered or, less likely, the pre-existing lesion may have undergone spontaneous cure leaving an altered skin to produce the itching. The term idiopathic pruritus should seldom be used as it would be strange if in the eternal chain of sequence which nature has welded there should be this single instance of an effect without a cause.

Just as we avoid a diagnosis of idiopathic pruritus so we have found it wiser to avoid the diagnosis of psychic pruritus when no etiology or skin changes can be found. Although neurogenic and psychogenic conditions may display protean manifestations, including itching, it is far safer to search diligently for a more evident cause.

An etiologic classification follows:

1. Pathology of the rectum, anus or colon.
2. Constitutional and allergic diseases, including gout, rheumatism, diabetes, and food allergy.
3. Portal congestion.
4. Pathology in the pelvic organs with reflex reference of sensation, or vaginal discharges causing direct perianal irritation.
5. Cause unknown.

The vast majority of the cases fall in group one, and we consequently search first in the lower bowel for the cause of the pruritus. If after careful examination of the anus, rectum and colon no pathology is found

(an infrequent occurrence in our experience), we then proceed to a general study of the patient for diseases lying in the other groups. Furthermore, if a constitutional disease or other important pathology be present, it usually will give more obvious symptoms than anal itching, so this is rarely a problem. This holds true of groups three and four as well. Group five should be kept very limited. We should keep in mind that pruritus may have multiple causes.

In general we have found the pathogenesis in the lower alimentary tract, particularly in the lower eight inches. The list of such conditions most frequently found in conjunction with perianal itching is led by proctitis, or coloproctitis, since a degree of colitis extending varying distances upward is almost always a concomitant. That it stands in etiologic relation to anal itching is also suggested by the fact that in occasional cases we have seen the pruritus develop shortly after the patient had come under observation for his proctitis alone.

Proctitis often produces discharges irritating to the rectal mucosa and perianal skin. This initiates itching, which appears to be merely a subminimal pain sensation, although it has been maintained that there are specialized nerve endings for conveying the sensation of itching. There may be some effect also by referring to the perianal skin stimuli which come from the anal canal through common nerve supply. The character of these discharges we have found to vary, the reaction being either alkaline or acid.

The next most frequent lesion found is hemorrhoids. Its frequency with pruritus is partially explained by the fact that the presence of hemorrhoids is one of the most common proctologic conditions that we find anyhow, whether in conjunction with pruritus and other lesions or alone. That is, there are cases of hemorrhoids with pruritus, of hemorrhoids with proctitis and pruritus, and of hemorrhoids with fistula and pruritus. The piles may not be the prime cause of the itching, but with its frequency thus considered it is not difficult to understand the origin of the layman's term for pruritus ani, "itching piles." Principally it is skin tabs, or thrombotic, prolapsing or ulcerating hemorrhoids that produce itching.

Fistula comes next in frequency in its association with pruritus ani. With the cure of the fistula the pruritus often disappears.

A not infrequent cause of itching around the anus is a surgical procedure in this region, because during the healing there is a discharge from granulation tissue or nerve ends become entangled in the resulting scar. The itching in these cases persists for a varying time.

Fistula in ano does not appear to be a frequent cause of pruritus in our cases, possibly because the patient is too exercised over the severe pain of the fissure itself to notice itching. As the fissure begins to heal there may be a complaint of slight itching which usually does not persist.

Cryptitis and papillitis have not been observed as a frequent accompaniment of pruritus.

In a few cases of pruritus ani we have found parasites as a cause, more especially in children. Condyloma

acuminatum was found as a cause in one case.

The importance of bacterial infection as a cause is difficult to estimate as it is usually present secondarily in old pruritus cases.

We have given the question of other local infections as a cause of itching some attention. In a series of selected cases clinically suspicious, we have not been able to identify fungi by microscopic examination of repeated scraping from the perianal skin, although in several of these cases we felt that the lesions were of mycotic origin inasmuch as they were similar to the itching lesions present on the fingers and toes of the same patients, which were diagnosed by a dermatologist as epidermophytosis. Improvement of both lesions appeared under treatment with a salicylic acid preparation. At the present time we are repeating this study, employing cultures in place of scrapings. Some writers have claimed a high percentage of positive findings of fungi in the lesions of pruritus ani, but here also as in the case of bacterial infection we must consider the possibility of the fungi as secondary invaders of traumatized and devitalized tissues.

Treatment of pruritus ani resolves itself into three divisions:

1. Treatment of the local skin condition and measures to relieve the itching.
2. Treatment of the causative lesion.
3. General measures.

We have placed treatment of the local skin condition first. It is important to give the patient early relief in order to break the vicious cycle of itching, scratching, excoriation, infection and further itching, and give the skin an opportunity to heal; to gain the patient's confidence; to counteract the altered condition of the skin which may otherwise persist after removal of the inciting lesion.

The measures routinely taken are cleanliness of the local area, use by the patient of a fifty per cent alcohol wash twice daily and always after stool, and application of an ointment for protective and anesthetic effect. Such an ointment which we have used is

B Benzocaine gr. XXV or Nupercaine gr. X

Mentholis gr. X

Ung. Petrolati oz. 1

M. et Sig. Apply two or three times daily.

This ointment is applied to unbroken as well as to excoriated skin and anal mucous membrane. Dr. E. H. Terrell, of Richmond, Va., suggested to us the use of

B Hydrg. Iodidi Rubri gr. II-IV

Kalii Iodidi gr. IV-VIII

Alcoholis 70% oz. IV

M. et Sig. Apply locally twice daily.

We believe we have had a measure of relief from the use of this lotion.

When these measures prove insufficient we have resorted to the intracutaneous injection of an anesthetic solution in oil, together with an alcohol which destroys the sensory nerves. Some of the solutions which we have thus used contain ethyl aminobenzoate (benzocaine) 3%, benzyl alcohol or phenmethylol 5%, ether 10%, in olive oil.

We use these solutions intracutaneously—a drop in each site of injection in the itching area, using about one-half cubic centimeter at each treatment. In addition we inject from one-half to two cubic centimeters subcutaneously. The periana region is divided into four quadrants and the quadrant in which the itching is greatest, or the skin changes most apparent, is injected at the first sitting. We note the points of injection on the case record of the patient, so that at a future treatment we may proceed to another quadrant. Injections are made about once weekly. With these solutions we

have usually had relief lasting about two months and often a complete cure. In those patients who have had recurrences after an apparent cure we repeat the injection course.

At the same time as these remedies are applied we correct medically or surgically whatever pathology may be present, such as the treatment of coloproctitis by diet and irrigations, excision of skin tabs or thrombotic hemorrhoids under local anesthesia, injection of internal hemorrhoids, or destruction of helminths, according to the requirements in each case.

The general measures are important. Constipation is corrected by mineral oil or mild laxatives, and in several cases we have completely relieved the itching by this means alone. The diet is carefully regulated; no over-eating; no condiments; no alcoholic liquors are permitted, and the use of sweets is restricted. Bad health habits are corrected and instruction as to good hygiene is given.

By these methods the great majority of cases of pruritus ani are curable. Only in those rare cases which do not respond to these measures do we resort to some form of undercutting operation.

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Weakness and Failure of Left Ventricle Without Failure of Right Ventricle: Clinical Recognition

From a study of 400 consecutive cases of organic heart disease, PAUL D. WHITE, Boston (*Journal A. M. A.*, June 24, 1933), concludes that weakness and congestive failure of the left ventricle are common whether or not there is an associated right ventricular failure. It is important to recognize this fact and to be able to diagnose the condition, since treatment by the administration of digitalis, by rest, or by both of these measures is usually of great help, even though the heart rhythm is normal and even though there is no evidence of congestion of the systemic veins. The left ventricle is the primary site of strain from four to five times more often than is the right ventricle, essential hypertension, myocardial infarction from coronary thrombosis (which rarely involves the right ventricle) and aortic valve disease exceeding in total frequency mitral stenosis, pulmonary valve stenosis, and pulmonary disease sufficient in degree to be a strain. Cases of heart failure without obvious factors of strain like those mentioned are not common. The most frequent cause of strain on, and enlargement and failure of, the right ventricle is left ventricular failure. There are several important symptoms and signs that point to weakness and failure of the left ventricle and which should permit its recognition in the absence of mitral stenosis and congenital heart disease; they are (1) cardiac dyspnea; (2) cardiac asthma or acute pulmonary edema, (3) diminishing vital capacity due to heart disease, (4) engorgement of the roentgen shadows of the lung hilus blood vessels, (5) protodiastolic gallop rhythm at the cardiac apex in the absence of heart block, (6) pulsus alternans, and (7) increasing accentuation of the pulmonary second heart sound. The failure in the past easily to visualize congested blood vessels in the lungs undoubtedly accounts for the unwarranted emphasis placed on increase of systemic venous pressure in congestive heart failure.

Influenza

Convalescence.—Great care must be taken after the fever has subsided. Relapses are very common and a mild initial attack may be followed by a dangerous relapse. A useful rule is that, after the temperature has fallen, the patient should be kept in bed for as many days as the duration of the fever. An attack is often followed by general debility, depression of spirits and insomnia, which may persist for weeks or even months. Should signs of cardiac involvement have been present the period of absolute rest must be prolonged. It may be advisable to continue the administration of digitalis in reduced doses for some weeks except in cases with a slow pulse. When the patient is able to get about, every precaution must be taken to avoid over-exertion either mental or physical. He should not be allowed to resume his ordinary occupation until he has completely recovered. A change of scene and climate, especially a visit to the seaside may do much to restore health of mind and body. Tonics are indicated, such as iron, arsenic, strychnine, and quinine.

—*The Practitioner.*

The Cathartic Evil

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FOR many years physicians, agents of corporations, chemists and unscientific advisers of special products have written concerning constipation and the treatment of the same by physics, diet and exercise. This paper will not deal deeply with the treatment of constipation by diet and exercise because it is a preliminary report based on actual clinical and chemical findings where physics have been taken more or less continuously, and by physics is meant drugs having as their action the production of the movement of the bowels to the point of more or less evacuation of feces. The diet and exercise will be mentioned in passing, and conclusions drawn, as will be done in regard to the above mentioned drugs.

In the beginning it is to be understood that this does not include a particular reason for giving a physic to accomplish a certain purpose, especially in a limited time. It does appertain to those cases where physics are given for constipation where there is no evidence of a clear-cut diagnosis having been made, or, having been made, is of such a character that immediate damage is not done to the local or general tissues by the giving of physics. The character of the physics given has made only the difference in the chemical and clinical results which would naturally follow the nature of the physic. For instance, those physics which act by osmosis and purging would effect a greater amount of dehydration in the bowel and those that acted simply by lubrication or continued motion would not cause so great a dehydration.

However, this paper is offered to prove the damaging effects of the continued use of physics and the results that are found by examining the feces and the condition of patients who have continued to take physics and to warn the profession and through them, the people, of the consequences of the continued taking of physics and to prevent, if possible, damage being done by advocates through advertisements, whether it be the radio or any other vehicle.

The following is a preliminary report and we will therefore confine this paper to the report of the cases and the findings therein with comments on the results of our findings.

The feces submitted were especially examined for the quantitative amounts of trypsin and amylase present. The specimens were collected as passed with no previous preparation of the patients, diluted to 3000 c.c. with normal salt solution and the supernatant fluid from a centrifugalized portion of this suspension used for the estimation of the ferments.

The method used for the estimation of amylase in the feces was that recommended by T. R. Brown in which 2 c.c. of a 1% solution of soluble starch is used in a series of twelve tubes to which amounts of supernatant liquid varying from 1.8 c.c. to .05 c.c. are added to eleven respective tubes, No. 12 tube remaining as a control. The entire amount is brought up to 4 c.c. with normal salt solution and the tubes incubated in a water bath at 38 degrees C. for one-half hour. The tubes are then filled with tap water and a drop of weak iodine solution is added to each tube (Gram's iodine solution was used in this study). The tube before the one in which the first definite trace of blue appears is taken as the measure of digestion of the starch and, consequently, the measure of the amount of amylase present.

ACCORDING to Brown the amount of digestion in normal individuals takes place in the 9 or 10 tube corresponding to 30,000 to 60,000 units of amylase respectively (representing the number of c.c. of 1 per cent starch solution which would be digested by 3000 c.c. of fecal suspension). Following this method we found that those individuals having normal bowel movements showed a change in the 9 or 10 tube but in most of the cases complaining of constipation the end result was not reached in any of the 11 tubes and additional tubes were necessary with correspondingly smaller amounts of supernatant fecal suspension fluid added down to .0125 c.c.

The method used for the estimation of trypsin in the feces was the well known Gross method, in which the amount of trypsin present is measured by the degree of digestion of a 1 to 1000 solution of casein. The test is carried out as follows:

5 c.c. of a 1 to 1000 solution of casein is added to each of 12 test tubes numbered from 1 to 12. The amounts of filtered fecal suspension fluid obtained as for test for amylase, varying from 1.8 c.c. down to 0.05 c.c., is added to respective tubes 1 to 11, No. 12 tube remaining as a control. The tubes are then placed in a water bath at 38 degrees C. for one hour, then tested for the digesting of casein by adding a few drops of a 3% solution of acetic acid to each tube and mixing gently. Digestion is complete in those tubes in which no white precipitate forms and the tube before the one showing a definite precipitate is taken as the measure of proteolytic activity.

Following the method of trypsin estimation we found in individuals having normal bowel action the end point was usually in the fifth tube as against the fourth tube as reported by Gross, this corresponding to 1 c.c. of fecal suspension fluid. In the individuals having abnormal bowel action results below and above this point were noted as will be shown below. The amount of trypsin present was calculated in the terms of units, representing the number of c.c. of 1 to 1000 casein that would be digested by 3000 c.c. of fecal suspension.

We will report but seventeen of the cases, deeming that is sufficient as a preliminary report, and six other cases that had certain characteristics.

THE first five cases, numbered from 1 to 5, are normal. These cases, for various periods of time, from one to several years, have been taking physics and have been in a seemingly normal condition of health during a limited period. They are as follows:

	Bowel Action	Amylase Estimation	Trypsin Estimation
1. O. F. Normal	9 tube	(30,000 U.)	4 tube (12,500 U.)
2. C. S. Normal	10 tube	(60,000 U.)	5 tube (15,000 U.)
3. E. M. Normal	10 tube	(60,000 U.)	5 tube (15,000 U.)
4. L. M. Normal	9 tube	(30,000 U.)	5 tube (15,000 U.)
5. G. T. Normal	8 tube	(15,000 U.)	3 tube (10,500 U.)

The cases from 6 to 17 had taken physics during a period ranging from three to twenty-five years and the results are as follows:

	Bowel Action	Amylase Estimation	Trypsin Estimation
6. J. A. Constipated (Atonic)	13 tube (480,000 U.)	9 tube (75,000 U.)	
(A) 7. W. E. Constipated	11 tube (120,000 U.)	8 tube (37,500 U.)	
8. W. E. Normal (after treatment)	9 tube (30,000 U.)	4 tube (12,500 U.)	
9. I. P. Constipated (Spastic)	12 tube (240,000 U.)	7 tube (25,000 U.)	
10. J. G. Constipated (Spastic)	11 tube (120,000 U.)	8 tube (37,500 U.)	

11. J. E. Constipated	12 tube (240,000 U.)	6 tube (18,750 U.)
12. P. B. Constipated	10 tube (60,000 U.)	7 tube (25,000 U.)
13. R. H. Constipated	13 tube (480,000 U.)	8 tube (37,500 U.)
14. M. G. Constipated	11 tube (120,000 U.)	9 tube (75,000 U.)
15. M. H. Constipated	9 tube (30,000 U.)	6 tube (18,750 U.)
16. J. M. Constipated	8 tube (15,000 U.)	4 tube (12,500 U.)
17. J. F. Constipated	12 tube (240,000 U.)	8 tube (37,500 U.)

In addition there were the following constipated patients, those who had taken physics over a period of years and shown increased amounts of pancreatic ferments in the feces, but these also showed increased amounts of indican in the urine. The degree of positivity of the indican present was indicated by plus 1, 2, 3, 4.

1. J. F.	Plus 3	4. R. H.	Plus 2
2. J. M.	Plus 4	5. P. B.	Plus 3
3. W. E. (A)	Plus 3	6. J. G.	Plus 1

The above analyses were made by Dr. P. S. Pasquarollo.

A Few Brief Histories

Case 1. Mrs. W. E., age, 58; examination made March, 1931. Family History: mother died of Brights, age 64; father, of pneumonia, age 84. Previous Personal History: ordinary diseases of childhood including diphtheria; has had "some trouble" with the kidneys; constipated ever since she was a young girl; started taking physics to her positive memory about the age of 12 years. Her tonsils were removed late in life. She had some teeth extracted for colds and infections (?); also had serum injections for same. Menstrual History: began at the age of 14; normal; married at the age of 37, two children, one living, one died at the age of 12. Patient never seemed very strong. She had an operation for repair. Menopause occurred right after the age of 55 years. Present Illness: always constipated, bloating in the bowels and for the last five or six years cramps in the bowels, passes some mucus, has a cough, has distress in the lower abdomen, which seems only to be relieved if she takes a pill or physic. She weighs only about 120 pounds, never weighed much more than that. Present Complaints: as remarked above, these appertain more to weakness, dizziness, bloating of the abdomen and distress in the lower part of same. Examination: stomach and bowels seemed low in their positions and there was a rather contracted liver. The color of the face was washed out, wrinkles of the skin were marked and a condition of dehydration was evident. Diagnosis: Gastro-enteroptosis, stasis of the bowels.

This patient was immediately warned to cease taking physics but was permitted on the third day to take an enema; these enemas, as to time, being extended as the case progressed until they were finally discontinued. The food given was simply meats, eggs and carbohydrates and many greens and a discontinuance, as mentioned above, not only of the physics, but of bran. She was ordered to take from eight to ten glasses of water a day and exercises for both diaphragm and the belly wall.

Within three weeks there was a marked improvement in this case and within six weeks she had discontinued taking the enemas and from that day until this, over two years, she has not taken a drug of any kind or an enema to assist the movement of her bowels and has returned to a better condition of health than she has ever known.

Case 2. Mrs. M. G., age, 50; examination made April, 1930. Family History: father, T.B., and other members of family in direct line have T.B. Personal History: ordinary diseases of childhood, including scarlet fever and smallpox. Ever since a child she has complained of "gas in stomach and bowels;" had pneumonia at the age of 34, an operation on the female genitalia about twenty years ago, also operated for floating kidney about twenty-four years ago, had a plastic operation twelve years ago, was operated upon for a fistula a year or so after that, had some of her teeth removed "for some infection," infection of the joints, especially the knees; had gall-bladder trouble for twenty years (this statement by her physicians). Patient has chills and periods of vomiting; always had gas and distress in the lower abdomen and lately complains of pain around her heart. Present Illness: began as stated above, when she was a little child, with constipation, biliousness, etc; seemed to be brought to a focus in 1930, when a shock caused her to lose a little flesh; she had vomited bile and there was great distress throughout the belly. Present Complaints: patient seems to have pains all over her; also susceptible to pain in right frontal region; trouble in the nose, back of her neck, precordial distress, palpitation of the heart, indigestion, sometimes vomits what she eats and sometimes vomits bile (?). Patient seems unable, lately, to control the passage of gas from the bowels and is perfectly miserable unless she takes her pills every night. Examination showed the stomach six inches below the

crests of the ilium. X-ray pictures taken by Dr. A. H. Clagett also showed great stasis in the large bowel. Her diet was very poor, both as to balance and character.

The same treatment was applied in this case; her diet was a little more explicitly chosen on account of her individual condition and until October, 1932, this woman had not taken a physic. This is a case where there was a deficiency in the stomach and the colon of the ferments, evidently the function of producing these having been nearly destroyed. This woman gained rapidly in weight and the symptoms of her dehydration, which were exceedingly marked, rapidly disappeared and a much more youthful appearance manifested itself.

Case 3. Mrs. R. H., age, 38; examination made October, 1931. Family History: Negative. Personal History: ordinary diseases of childhood; had asthma, several attacks of tonsillitis, appendix was removed six years ago. Patient was constipated for fifteen years. Present Illness: her gastro-intestinal trouble seemed accentuated and brought to a point in 1925 and she has been going down hill ever since. She seems unable to retain food and vomits it undigested. Present Complaints: headache, general weakness, infected tonsils, soreness through the chest, through the back, shortness of breath, pain in the stomach, vomits, and is still constipated. Patient takes a physic to relieve distress over the lower belly, mostly salts of some kind. Her habits as to diet and exercise, poor. Diagnosis: gastroenteritis from taking physics.

This patient was treated on the lines mentioned above by another physician who reports the same good recovery.

Case 4. Mrs. I. P., age, 57; examination made October, 1931. Family History: Negative. Personal History: pneumonia, had headaches all her life, so-called bilious spells and constipation. Menstrual History: nothing pertaining to this case. Present Illness: after a succession of bilious spells, constipation and the taking of physics for over twenty-five years, her present illness seemed to reach a critical point about a year ago when she found that she could not carry on her work, was easily fatigued, the slightest exercise causing her to be "out of breath." There was pain in the lower part of the abdomen, gas, and the same circle, taking salts, pills or what not in order to move the bowels and carry off the gas (this, a daily occurrence). Her habits as to diet, poor; she has always been a consistently hard worker under great difficulties. Diagnosis: Colitis.

This woman was put under the same treatment and has not taken a physic for the last eighteen months.

Case 5. Mr. P. B., age, 63; examination made September, 1930. Family History: Negative. Personal History: scarlet fever, typhoid fever, influenza, gout. Patient was constipated all his life. Present Illness: became critical in August, 1930; diarrhea, great pains in the lower part of the abdomen, gas, so-called indigestion, fainting spells, palpitation of the heart, dyspnea, high blood-pressure, eczema and beginning to show great signs of cardiac distress. Present Complaints: patient has an itching over the body, general cough, diarrhea, passes "slime" from the bowels, palpitation of the heart. The palpitation occurs when the gas comes into the stomach and there is distress in the lower bowel or if he smokes too much or neglects to take his physic. He belches and seems to get relief only if he takes salts or pills and lately these are commencing to make him very sick at the stomach. His habits are more or less sedentary; diet only fair. This man also had gotten down to the point where he had his vicious circle of gas, pill, relief, distress, gas, pill, relief, all the time going lower in his vitality until he was threatened with loss of employment as unable to perform his functions.

This man has not had a physic or an injection since the first four weeks, has returned to his work, and except for a forced economic vacation by the firm, has not lost a day and all his symptoms have disappeared. He has, however, the remains of the trials that he had gone through, at times a little tachycardia. Early examination of his kidneys showed casts and albumin; he was dehydrated, had pain and distress and was in misery most of the time.

CONCLUSION: There can be no doubt that the continued taking of drugs or harsh foods to move the bowels, repeatedly and continuously, will result in a loss of complete intestinal digestion and a fermentation continued in the large bowel due to the ferments being washed down to that point; such "digestion" was never meant to take place in this locality by the nature of the human being. That a bad habit is established by taking the physic: first, the danger of dehydration; second, washing the ferments and the undigested food into the large bowels where gas is produced and unless removed gives distress and yet by removing that, you make a

vicious circle which is continuous and destructive locally and constitutionally. Many of these patients finally lost fifteen, twenty and twenty-five pounds. They were markedly dehydrated. One case mentioned here revealed that in the stomach or in the intestines, after continued drastic physics, there were few enzymes, showing that there had been some destructive change in the intestines and pancreas that produced these enzymes. Dr. Rehfus has lately added the fact to our knowledge that salines destroy a certain active principle found in the duodenum which stimulates the musculature of the bowels to activity.

Comment: Physicians should realize the dangers of continued taking of physics and the public should be warned. A later report of these cases will be given by Dr. Pasquariello and myself.

It is well to take the patients into one's confidence and warn them that for a week or so there will be some fighting but assure them that if they persist they will win in the end and be in a much better condition of health, in all probability, than ever before and at least be rid of a very injurious habit. The diet selected in all these cases was made with the purpose of fitting the diet to the indications of the individual. It is believed that no general diet can be given by anyone to cover the ills of or produce comfort in the human family but must be selected. Next, it has been found that the harsh, irritating foods were responsible for some of the pain and distress occurring in these cases and were not beneficial. An individually selected diet invariably brought forth its reward.

Central Medical Building,
18th and Chestnut Streets

Directions for the Submission of Specimens for Laboratory Examination

Pursuant to Regulation 9, Chapter II, of the Sanitary Code, physicians in attendance on persons affected with, or suspected of being affected with, any of the communicable diseases mentioned in this regulation should submit to an approved laboratory, or to the laboratory of the state department of health, the following specimens for laboratory examination, together with pertinent data concerning the history and clinical manifestations necessary for the examination.

ANTHRAX

1. Exudate from the lesion on a sterile swab (tube outfit with swab);
2. Films of the exudate on glass slides (slide outfit).

CHANCRON

In order to detect concurrent syphilitic infection, submit the specimens specified under Syphilis.

CHOLERA, ASIATIC

1. A specimen of feces in a sterile container without preservative (jar outfit);
2. Ten cubic centimeters of blood to be examined for evidence of typhoid fever (typhoid tube outfit).

DIPHTHERIA

A culture from the throat on Loeffler's blood-serum medium and, if symptoms of rhinitis are observed, a culture from the nose also (diphtheria culture outfit).

DYSENTERY, BACILLARY

1. A specimen of feces (typhoid jar outfit containing 30-per-cent glycerol);
2. Ten cubic centimeters of blood to be examined for evidence of typhoid fever (typhoid tube outfit).

EPIDEMIC OR STREPTOCOCCUS (SEPTIC) SORE THROAT

A culture from the throat on Loeffler's blood serum medium, and the swab used in making the culture (diphtheria culture outfit).

GLANDERS

1. Ten cubic centimeters of blood (typhoid tube outfit);
2. A specimen of discharge on a sterile swab (tube outfit with swab);
3. Films of discharge on glass slides (slide outfit).

MALARIA

Films of blood, on glass slides, preferably taken just before the expected chill (slide outfit).

MENINGOCOCCUS MENINGITIS

A specimen of spinal fluid in a sterile container (tube outfit—swab or needle removed).

OPHTHALMIA NEONATORUM

Films of the exudate from the eye on glass slides (gonorrhea slide outfit).

PLAQUE

1. A specimen of discharge or aspirated fluid, if a bubo is present (tube outfit with swab);
2. Ten cubic centimeters of blood (typhoid tube outfit);
3. In the pneumonic type of plague, a specimen of sputum (jar outfit).

SYPHILIS

1. Fluid from the lesion to be examined for *Treponema pallidum* (chancre fluid outfit containing capillary tubes);
2. Ten cubic centimeters of blood for the complement-fixation (Wassermann) test (syphilis tube outfit);
3. When laboratory tests fail to disclose syphilitic infection, 10 cc. of blood for the complement-fixation (Wassermann) test, taken at weekly intervals until eight weeks have elapsed following the appearance of the primary lesion, unless evidence of syphilis is disclosed earlier.

TULAREMIA

1. Ten cubic centimeters of blood (typhoid tube outfit);
2. If ulcerating lesions are present, films of discharge on glass slides (slide outfit), and a specimen of discharge on a sterile swab (tube outfit with swab).

TYPHOID AND PARATYPHOID FEVER

1. Ten cubic centimeters of blood (typhoid tube outfit); if this is not practicable, from 2 to 4 drops of blood collected on a glass slide and allowed to dry (slide outfit);
2. A specimen of fluid feces (typhoid jar outfit containing 30-per-cent glycerol) and, if there is evidence of localization in the genitourinary tract, a specimen of urine (typhoid jar outfit containing 30-per-cent glycerol).

TYPHUS FEVER

1. Ten cubic centimeters of blood (typhoid tube outfit);
2. A specimen of feces to be examined for evidence of typhoid fever (typhoid jar outfit containing 30-per-cent glycerol).

UNDULANT FEVER

Ten cubic centimeters of blood (typhoid tube outfit).

VINCENT'S ANGINA

1. Films of the exudate on glass slides (slide outfit);
2. A culture from the exudate on Loeffler's blood-serum medium, to be examined for diphtheria bacilli or hemolytic streptococci (diphtheria culture outfit).

—Health News

Dermatitis Produced by Cosmetics (La Gerardine)

Lester Hollander, Pittsburgh (*Journal A. M. A.*, July 22, 1933), points out that in dermatitis produced by cosmetics the eruption may develop either immediately after the use of a new preparation as a result of specific hypersensitivity or of chemical irritation, or only after a long period of use, as a result of sensitization. The location of the eruption, the sudden appearance, the intense subjective symptoms (burning and itching), the time element and the type of skin eruption may arouse one's suspicion that the dermatitis is produced by contact with cosmetics. The author discusses these points in detail. He reports three cases of circumscribed dermatitis which came under his observation within the last few months which illustrate some of these points. All three were caused by the preparation "La Gerardine," which is used for producing "natural" waves in the hair.

The Doctor in Court

SIEGFRIED BLOCK, A.M., M.D., F.A.C.P.

Brooklyn, N. Y.

LAST week in court, while trying to prove that the patient had a pituitary disorder from an accident, criticism arose because the doctor did not sit by and measure the urine that he swore came only from the patient and no one else. It was asserted by the doctor that a little boy of seven was passing 1½ gallons of urine in twenty-four hours; that this was the average amount on three successive days.

It was contended by the attorney, on cross-examination, that the doctor's testimony was hearsay evidence, and the attorney stated that the doctor took the word of nurses and the family of the boy in saying the patient had actually passed such a huge quantity of urine; that the doctor had no legal proof of such being an actual fact.

This experience suggested the title of this paper and the subject of the doctor and his activities in court.

A doctor gets into court either as a principal or as a witness. As a principal he is either a plaintiff or a defendant. As a witness he is either a medical witness or an expert. He is never in court to serve as a juror. Next to lawyers, doctors appear most often in court.

As a medical witness only medical facts may be discussed by the doctor. Such facts are temperature, pulse, respiration, paralysis, bleeding, bruises, operations, etc.

As an expert, he may give medical opinions and express not possible but probable end results in answer to such questions as "How long will the plaintiff live?"—"Will he ever get well?"—"In two years what will the probable condition be?"

He may answer a hypothetical question put to him by the lawyer in which the lawyer asks what is a reasonable cause of the condition. He is never asked to make a positive statement.

History of cases from the patient or relatives is hearsay because they may tell the doctor anything. Subjective symptoms are also hearsay because they cannot be proven. For instance, how can one tell that an anesthesia exists on an arm, or that a patient is dizzy or nauseated? How can one tell that the patient is not exaggerating his pain?

Malpractice means an improper practice.

We have malpractice in every field of endeavor—not only in medicine. A reasonable error of judgment is permissible. One must apply what is considered average treatment in a particular locality in which the physician resides. Accidents may happen but the patient must be notified of such an accident for his future protection. For instance, a hypodermic needle breaking, the patient must be told of the breaking and then advised whether a removal is absolutely essential and instructed about the removal.

Adults are bosses of their own bodies if they are sane. No one can force them to undergo any kind of medical treatment.

In all malpractice cases both sides must have medical experts to explain all probabilities of the case for the

Address at the North Hudson Physicians' Society, Union City, N. J., April 24th, 1933.

benefit of the jury. Even if one side should win without an expert's testimony, higher courts will reverse the decision on appeal. Malpractice cases are becoming more common every day and it is necessary to be properly covered by insurance for protection.

In negligence cases one must try to help one's patient and show the case in the most favorable light for his patient without diverging from the truth.

If a doctor will persist in adhering to the facts despite the most scathing insinuations from an attorney attempting to turn those facts into apparent untruths, he is bound to impress at least some of the jury with his sincerity. Lawyers sometimes stage weak cases to a jury in such a way as to achieve the effect sincerity alone should accomplish, and endeavor to build up their cases by damaging the opposing testimony by all sorts of innuendos.

Judges are really expert lawyers and often think in the same trend as the lawyers. In some cases it frequently follows that where the witness has been too severely handled by the lawyer, the jury is unconsciously swayed by sympathy for the witness and acts accordingly in rendering a verdict rather than judging the case on its merits.

Juries are peculiar. If it happens in a malpractice suit that the doctor has been good to his patient, and the juryman's own experience has been to the contrary—his doctor being curt and of a different type—then he is willing to believe the worst of the defendant doctor. He cannot understand why this doctor should be so good to his patient when his own physician in whom he has utmost confidence should be so impersonal and brusque.

When a doctor has finished testifying he should immediately leave the courtroom to show his disinterestedness.

In medical matters the doctor should be better informed than the average lawyer and when he bears that in mind he can hold his own with ease. When books of authority are mentioned the witness has the right to differ with what has been written and also to say that he has not read this or that particular authority. There are thousands of medical books and no one can be expected to know all of the books that are printed.

When a lawyer says "What do you know?" or "How or why did this occur?" a loophole is opened and you can often speak freely. When asked the question "Doctor, did you ever make a mistake?" or "Were you ever wrong?" your answer should be "Yes," and then if the lawyer says "May you not be wrong in this case?" the answer is "I don't think I am"; then if permitted by him to talk, go into details and tell him why you do not think you may be wrong.

Of the neuropsychiatrist questions like this are asked: "In epileptics do you always see the alleged convulsions?" "If not, how could you make the diagnosis?"

"Was the tongue scarred?" "Could you say definitely whether that scar came from a bite, or could it have been from a cut with a knife or other sharp instrument?" "Why do you call this case traumatic insanity?" "If all these symptoms you describe were to develop and you had no history of trauma would you still call it traumatic insanity?" "Suppose all the symptoms you describe exist and this patient is insane and you were told there was no trauma, would you then call it traumatic insanity?" "Doctor, describe the difference."

In criminological work alcohol often mitigates a crime, if the drunkenness was not purposely produced to aid in the perpetration of the criminal act. In the Synder-Gray murder case, Judd Gray took whiskey to incite his courage in order to be able to kill Snyder.

The legal and medical outlooks in cases differ very much. Medically we think of a person being insane when he has delusions, hallucinations, catatonia, etc., and other rounded out symptom complexes. The law considers responsibility only in such situations as are suggested by such questions as "Was the deceased fully responsible when he made his will?" "Did he understand thoroughly what he was worth?" "Did he know what he could get for his money?" "Did anyone sway him unnecessarily so that his judgment became biased?" etc.

When crimes are committed, the same general thought exists—legally one must know the nature and quality of the act and know the act was wrong. Legally, unconsciousness, no matter how slight the degree, supposes that there is no will to carry out a coordinated act, hence responsibility ceases. The lawyer uses this word unconsciousness in an entirely different sense and much more freely than does the doctor.

When a case is finished, each lawyer sums up for the jury and tries to picture his facts as more important than those of the other side and his witnesses as angels and the opposing witnesses as either stupid or unreliable, to say the least, or even as actual villains. The opposing attorney before the jury is frequently slurred. However, as soon as the jury goes out, the lawyers shake hands and are friends—what either has said about the other becomes just a part of the day's work. Too often do doctors or other witnesses become offended at some legal cross-examination and life-long enmity results. Just because one X-ray man said a fractured spine could never get well, and the opposing physician disagreed, these two men are unnecessarily embittered for life.

One interesting circumstance is the "point of view" from which the medical examiner is supposed to regard his case. Take, for example, the following case, in which the examiner was consulted by both sides, the district attorney's office and the defense counsel. A young man was accused of spending days on the benches of the public parks and pinching different girls as they passed, meanwhile exposing his person. The question concerned the mentality of the young man.

The District Attorney's point of view—"Mr. A, 26 yrs. old. Never got along in school, had trouble with all of his teachers, played truant, used to strike his mother. Stayed away nights from his home. Brought before the Children's Court because of minor offenses from time to time, and never worked more than two days in the one position. He is a scoundrel; he is NO GOOD."

The Defense Counsel's point of view—"This poor fellow never could get along in school no matter how

hard he tried. Private teachers could not help him much. He was always nervous and irritable; all the leeway the family gave him did not help to keep him at home. He tried many positions but was unable to hold them on account of his weak mental condition. The poor boy was always irresponsible and pitied by his family. They had often thought of sending him to a sanitarium. These acts in the park were only further proof of the boy's condition."

This sort of a case explains why experts so often differ—all depending on the "point of view" of the person presenting the facts to the expert.

A few weeks ago, while I was appearing as an expert for a policeman who shot his sweetheart, the district attorney's office presented the facts as follows: "He left his wife. He was dismissed from the police force. He drank to excess most of the time. He lived on the money given him by his sweetheart. He had syphilis and gonorrhea and he should be electrocuted for murder because he was of no value to society and was rotten to the core. He should be made to suffer the penalty for the crime he had committed."

The defense counsel attempted to show up the man as best he could and brought out from my cross-examination the following: The poor man's head was shaking. He had marked tremors of his hands from alcohol. His voice was paretic. His response to questions was slow. He had had delirium tremens twice. His sweetheart sapped him sexually much more than even a healthy man could stand and in the most perverted ways. His gonorrhea was not only in his sexual organs but also in his blood stream, which was shown by a complement-fixation test. His wife could not live with him any longer. His paramour was taking advantage of him to satisfy her inordinate perversions. "How could such a man be as responsible as I am?" said the witness to the court jury. "The poor fellow is to be pitied." The witness said he should not be at large, but should be in an institution for life, a sad derelict of society. The murderer was not electrocuted.

The following case is now before the courts: Two men of ill fame were arrested for burglary. Their record was very bad. They were accused of burglarizing the home of a third man who was in the illicit liquor business and he was also supposed to be of ill repute. There were several trials. The men in question always attempted to prove an alibi. At the last trial the jury found the defendants guilty but before the judge had sentenced the criminals the third man became violently insane and was taken to a state hospital where the diagnosis of paresis was made. A neuropsychiatrist was employed to inform the court and jury whether this insane man had delusions and hallucinations concerning the crime at the time of his testimony at the trials.

To give an example of how fictitious malpractice cases may be worked up, and not entirely dishonestly so, the following instance is cited:

A physician referred a case of trigeminal neuralgia involving the right lower one-fourth of the nose, the right half of the upper lip, and the upper teeth on the right side. The patient had suffered from various types of neuralgia of the fifth nerve on the right side for many years with very slight let up, although treatment was never stopped. An injection of alcohol was made over the lateral incisor on the right side, and the pain was relieved. A suit was started for blindness in the right eye which the patient believed came from the injection. Upon various ophthalmological examinations it was

proven that a neurokeratitis had existed for many years previously and the man never knew he was blind before he received the alcohol injections. Although the case was on the calendar a long time it was never brought to actual trial but was finally dismissed because no expert would appear for the patient. However, he has had no more neuralgia.

Another thing we should bear in mind is that it is always well to weigh the history of every case as given by the patient to the examiner, as for instance: several years ago a man who happened to meet with an accident while in a trolley which ran into a store came to be examined and treated for his injuries. It was noted that he had a piece of frontal bone missing about the size of the palm of the hand and the pulsating brain could be seen through the skin of his forehead. There was noticeable spasticity in the opposite leg, also a paresis. A doctor swore in court that this accident had caused a fractured skull and brain injury. The accident was supposed to have happened 1½ years before the examination. The court and attorneys were confidentially informed that this head injury was a result of shrapnel wounds received in the war. But the doctor was never informed as to this and could not understand when the court asked him: "Doctor, can you tell whether an injury is two years old or eight years old?" "Can you tell when an injury is one year old or five years old?" And, of course, it was impossible to tell and the judge received the impression at the time that the doctor was in cahoots with the plaintiff to trifl with the court. This situation was very embarrassing to the doctor. The injuries the man had received in the recent trolley accident were minor.

In conclusion, emphasis may be given the following point. It is conceded that a physician might possibly know more medicine than a lawyer; do not be afraid if a divergence of opinion arises between you while on the witness stand.

Finally, it may be wise to remember that several years ago, when a letter addressed to twenty leading lawyers in trial work and to many judges, including all the Judges of the United States Supreme Court, aiming to elicit what they thought was the wisest way for a witness to act on the stand, the consensus of opinion was that the witness should not jest with the lawyer. The witness should at all times be very serious and not talk too much. He must be well prepared on his subject and not be afraid when telling the truth no matter what the opponent might say. The lawyer and not the witness must handle the jury. None of us is infallible and one cannot be expected to have one hundred per cent cures or even improvement. There are so many cases in which the end results are in doubt that one must so inform the judge and jury. A good lawyer treats the opposing witness with respect and thus establishes a rapport with the jury which is much to his benefit. The jury cannot help but feel the reaction either to a bully or a gentleman. In the same way a gentlemanly witness makes a better impression than any other type.

502 Washington Avenue.

B. *Supestifer* as a Cause of Disease in Man

Bacillus supestifer, a member of the salmonella group, was first brought into prominence under the name of the hog-cholera bacillus (*Salmonella choleraesuis*, as it is often called in America) as the cause of hog cholera or swine fever. However, while this bacillus is frequently isolated from cases of swine fever, it is now regarded as being not the causal organism but

a secondary invader. Much confusion has been caused by a plurality of names, and especially by the use of the term *B. supestifer* without exact serological definition; but actually this organism is only rarely found to be a cause of human disease. Some continental investigators go so far as to question its pathogenicity to man, while W. G. Savage and P. B. White in 1925 regarded it as an organism of low virulence to man, which can set up an outbreak of food poisoning "only under exceptionally favourable conditions." Further experience, however, showed that it was less rare than had been supposed, and W. M. Scott in 1926 described four separate outbreaks of food-poisoning in this country, in which over 100 cases in all of gastro-enteritis occurred, one being fatal, and in which the bacillus incriminated was *B. supestifer* (sub-type 2). Savage and White had previously included one outbreak in their series, while at least three outbreaks have been described in U.S.A. These facts seem to establish this organism as a cause, though not a frequent cause, of food-poisoning outbreaks. As usual with the salmonella group, the problem is complicated by further differentiation into sub-types, and there are now three types which have to be considered. One sub-type, generally known as *B. paratyphosus* C, is associated with human disease of the paratyphoid fever type, but, with rare exceptions, is found only in the East, in places such as India, Mesopotamia, and the Balkans. It is separable from, but closely allied to, the two other types. The true *supestifers* fall into two sub-types. Sub-type 1, the *American* type, is almost exclusively confined to that continent, and is the type isolated from American swine. It has serological differences and cultural distinctions, such as its failure to blacken lead acetate and its inability to ferment dulcite and arabinose. Sub-type 2 is the Western European type. This is the type which is isolated from swine fever infected swine in this country, and is the one associated with *supestifer* food-poisoning outbreaks. This type regularly and rapidly blackens lead acetate and ferments both dulcite and arabinose. That *B. supestifer* may cause sporadic disease other than food-poisoning in this country has recently been shown by Nabarro and his collaborators, who cultivated this organism from the joints of two children suffering from arthritis. Several isolated cases of paratyphoid fever-like nature due to this bacillus have also been reported in U. S. A.

The story is carried a stage further in a valuable paper by A. G. Kuttner and H. D. Zepp which has just been published. During the winter of 1931-32, within a period of four months, seven children with ages ranging from 7 months to 6 years were admitted to the Harriet-lane Home, Johns Hopkins Hospital, Baltimore. All the cases were entirely unrelated. They were admitted for acute febrile diseases of paratyphoid fever type, but showing considerable differences; none was of food-poisoning type. In every child there was definite blood infection, *B. supestifer* being isolated from the blood. It is of interest that in only one case, in spite of repeated examination, was the organism isolated from the faeces or from the urine. The course of the disease was mild, there were no recurrences or complications, and all the patients recovered after a period of 14 to 29 days in hospital. The bacteriological investigations were carried out with great care. The fact that six of the strains isolated were found to belong to sub-type 2 and one to sub-type 1 is of great interest in view of the known geographical distribution of these three sub-types.

From the different cases recorded we now know that *B. supestifer* (sub-type 2) can cause disease in man, either in the form of an outbreak of food-poisoning or as illness of the type of paratyphoid fever. It must still be regarded as a rare cause of human illness, but further experience may show a greater prevalence than the reported cases suggest. The sub-type of salmonella found is of importance from the point of view of causation. In the cases of Kuttner and Zepp no sources of infection could be found, but they suggest as most probable infection from specifically infected pork. Since *B. supestifer* is an organism often associated with swine fever, and undetected cases of this disease may be sold as food, it cannot be excluded as a potential source of infection. The likelihood that it was actually the causal organism in the cases described by Kuttner and Zepp is discounted by the fact that in all but one child the strains were of sub-type 2, whereas the ordinary type in swine in America is sub-type 1. In England this discrepancy does not exist, since all the positive types isolated by White were of sub-type 2, and therefore of the same sub-type as those found in food-poisoning outbreaks. Obviously still more detailed study is necessary before causal factors can be fully established. All that can be said at present is that *supestifer* strains from pigs, and probably also from other animals, seem to be of rather low virulence to man, though potential causes of human infection.

—The Lancet

Cancer

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EXECUTIVE SECRETARY, NEW YORK STATE COMMITTEE OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

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Precancerous Lesions of the Stomach and Intestine

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THE modern conception concerning the origin of carcinoma is that this process does not arise in normal tissues but is preceded by earlier abnormalities not in themselves malignant which we call precancerous lesions. In tissues that can be directly inspected visually such as the skin, lip, bladder, etc., we know a good deal about these precancerous lesions. In general they are of two types: first, congenital nests of cells that never develop normally, such as the pigmented mole and the fetal thyroid adenoma; and second, the result of repeated irritation from mechanical or chemical trauma, such as the smoker's carcinoma of the lip, cancer of the tongue developing opposite a jagged tooth and the chimney-sweeps' epithelioma. In many instances it may be impossible to say definitely from which type a given malignant lesion develops as the congenital nest may be a minute, even an invisible area, while on the other hand the forms of trauma are many and may not be obvious as they are in the illustrations given above.

ever, this is a rather infrequent occurrence not chiefly responsible for the considerable number of cases which clinically appear to be simple chronic gastric ulcers but eventually prove to be carcinomatous. The important point for the clinician in this matter is to realize that from ten to twenty per cent of the cases diagnosed on the basis of clinical and roentgenological evidence as chronic gastric ulcers prove later to be or to have become malignant (1). Consequently every case of chronic gastric ulcer



Figure 1. Multiple polyposis, a precancerous lesion. X-ray of typical case. Note the great number of filling defects in the sigmoid; each one of these is a polyp.

In the intestinal tract, from the esophagus to the rectum, it is much more difficult for us to study precancerous lesions because most of this area can not be inspected directly except at operation or at autopsy. It is not surprising, therefore, that our knowledge of the changes that lead to malignancy is much more fragmentary for this system than in the case of the skin, the mouth, etc. In the stomach and in the large bowel, however, the evidence strongly points to the conclusion that here also malignant transformation does not occur *de novo* in the normal mucous membrane but arises in areas that have shown either congenitally or developmentally certain changes from the normal. In the stomach one thinks first of the gastric ulcer as a possible precancerous lesion. There has been an extensive and at times acrimonious debate on this point. Most careful students of this problem are now agreed that at times chronic gastric ulcers previously benign are the seat of malignant degeneration. Probably, how-

This contribution is a part of the Clinical Conference held at St. Mary's Hospital, Rochester, N. Y., in connection with the Eighth Annual Meeting of the New York State Committee of the American Society for the Control of Cancer, December 13, 1932. Leo F. Simpson, M.D., F.A.C.S., Chairman of the Conference.

should be treated as a carcinoma suspect until definitely proved to be benign. Frankness requires us to admit that we do not yet know much about the preceding condition that leads to many of the carcinomas of the stomach. Probably the precancerous change in the gastric mucosa which permits the development of malignancy is more commonly an alteration that can be seen only microscopically (called hypertrophic gastritis) rather than a gross lesion. The symptoms of such a change in the gastric mucosa are indefinite. But it is important clinically to recognize that any alteration in the habits of digestion, normal for a given individual, suggests the development of a precancerous or frankly malignant condition in the stomach. The rare benign

tumors of the stomach are also possible precancerous lesions and should be removed when recognized.

In the large intestine, however, the evidence is much more conclusive. In the last two decades we have learned to recognize certain benign lesions,

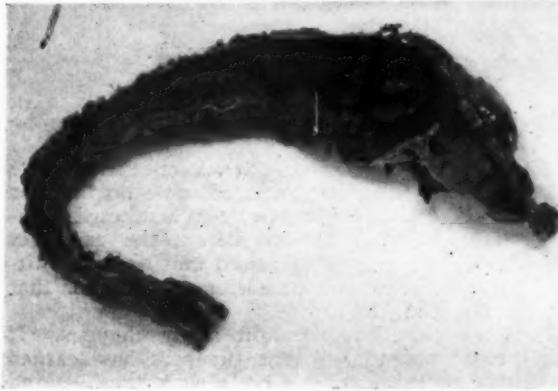


Figure 2. Multiple polyposis in specimen of resected colon from the patient whose X-ray is shown in Figure 1. The numerous polyps have been considerably shrunken down by the fixative. This is definitely a precancerous lesion and if not removed eventually ultimately in nearly one hundred per cent incidence of carcinoma.

namely, adenomas and polyps, as precancerous (2). In the first place, in carcinoma of the colon there is a high incidence of association with such non-malignant conditions. Conversely, it can be shown that where there are many of the latter, there is a high incidence of development of carcinoma. This is well illustrated by the clinical condition we recognize as multiple polyposis where if the involved colon is not excised nearly one hundred per cent of the patients will eventually develop a large bowel cancer. And as a final clinching proof, where multiple polyps or adenomata occur in the same individual, these lesions can be found with all gradations of change from the completely benign through the form showing malignant degeneration at the traumatized tip to the completely malignant polyp. It therefore seems unescapable that the polyp and the adenoma in the colon are frequently precancerous lesions. And it is our belief, based upon the best clinical evidence obtainable, that a large number, probably the majority, of the carcinomas of the colon arise upon such a basis. It consequently behooves us to look care-

fully for any polypoid lesion in the large bowel and, finding it, to remove the lesion or, if the polyps are too numerous for this, as in multiple polyposis of the colon, to remove the involved segment of bowel. Whenever a polyp or adenoma is found in the large bowel, as careful a search as is possible should be made for other similar lesions, as they are often multiple. Lockhart-Mummery records a patient having three separate and entirely distinct papillary carcinomas in the colon as well as many benign adenomas. After removing a benign lesion of the colon or rectum the patient should be closely followed over a period of several years to see whether similar lesions develop. As many as four separate adenomas have developed at various points in the rectum and been removed in this way from the same patient over a period of four or five years. Occasionally a carcinoma will develop definitely in the neck of a chronically inflamed diverticulum and the latter must be considered as a possible precancerous lesion. However, this sequence is infrequent and relatively inconsequential considering the fact that diverticulosis is probably present in at least five per cent of individuals. There is an important clinical variety of chronic diverticulitis which closely resembles an annular carcinoma of the colon in its symptomatology and in its X-ray appearance. However, this variety is not carcinomatous and does not frequently lead to carcinoma. It is largely a cancer-mimicking rather than a cancer-producing lesion.

Research on the Nervous System

A grant of \$58,500 to the Washington University School of Medicine from the Rockefeller Foundation towards the expense of conducting a five-year research project in the physiology of the nervous system has been announced by Chancellor George R. Throop. This grant will provide for the expansion of a comprehensive program of research on the nervous system, which has been under way in the School of Medicine for a number of years and in which several of the departments of the School have cooperated. The work to be done under the present grant will be conducted chiefly by Dr. George H. Bishop, professor of biophysics in the Washington University School of Medicine and by Dr. S. Howard Bartley, research associate of biophysics and psychology. The work will be done in the laboratories of the Oscar Johnson Institute for Research in the medical school group.

"The work which is now to be undertaken," says Dean W. McKim Marriott, "is based on the fundamental series of investigations on the nature of nervous activity carried out by Dr. Joseph Erlanger and Dr. Herbert S. Gasser and their associates in the Department of Physiology of the School of Medicine. Drs. Erlanger and Gasser were successful in perfecting a new method for the study of activity of the nervous system through measurement of the minute electrical currents associated with the nervous impulse. Early in the course of this investigative work it became evident that a correlation of the studies in pure nerve physiology with structural and microscopic observations of the nervous system, with psychological, biochemical, pathological and surgical observations would be advantageous. The field of investigation was accordingly broadened through the participation of members of a number of departments in the School of Medicine in addition to those in the Department of Physiology. So fruitful have been the findings that the time has now come when further expansion is distinctly desirable. The facilities offered by the new Oscar Johnson Institute, together with the grant from the Rockefeller Foundation have made this extension of the work possible.

"Much of the ground work in the analysis of typical nerve activity has been done and the remainder will be carried out as occasion arises. The next step is to study not merely nerves but nervous function in the living body and the ways in which such function is disturbed as the result of injury and physical or mental disease. While the experimental approach is from the side of nerve function, the possible ramifications of such problems are very extensive." The work now under way in the Department of Physiology and other departments of the School of Medicine will be continued. The entire project represents one of the most ambitious research programs ever undertaken by a medical school in the United States.

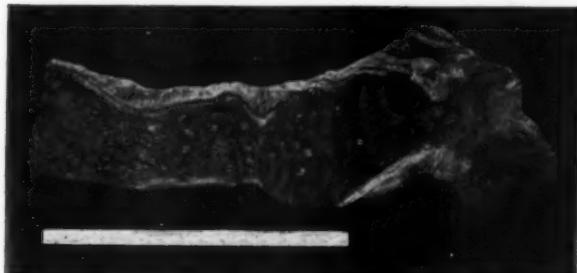


Figure 3. Advanced carcinoma of the colon associated with several benign adenomata in the segment just above the malignant lesion. The progressive steps in the malignant degeneration of such originally benign conditions have been followed. They are definitely precancerous lesions.

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Economics

Department Editor: THOMAS A. McGOLDRICK, M.D.

CHAIRMAN COMMITTEE ON ECONOMICS OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS, BROOKLYN

Free Choice of Compensation Physician

UNDER the present New York State Workmen's Compensation Act an injured workman is not permitted any freedom in the selection of his physician. That right of selection is by the law given to the employer. In certain industrial organizations where disability of a workman from sickness as well as injury is provided for, the choice of the physician rests with the employer although the employee may be contributing directly through his welfare association a proportion of the financial cost. The arguments for this condition have long since been worn thin. The employer feels that if industry is paying the bill, he should select such physician and hospitals as will keep down the expense. The family physician, it is implied, would unduly and dishonestly prolong the period of disability, have no interest in the drain on industry, and would seek his own utmost enrichment. Furthermore, the employer feels that he has more intelligence than his workman even in the selection of a family physician and therefore he is better fitted to select the right kind of doctor for each particular kind of physical disability that may arise.

In practice, the employer usually did not exercise this right of selection but delegated that duty to someone else, someone whose only interest in the entire subject was to make money—namely, an insurance company. Some business organizations were large enough to engage on salary some full-time physicians, while others calling themselves self-insurers made contracts with certain doctors or certain hospitals to care for the employees. Others, again, engaged some strictly commercial clinic, or the head of one or several branch commercial clinics, where subordinates did the work. The names of these subordinates were not even known to the employer or to the patient. The motivating power in all the plans was money. True, industry was anxious that the disabled person be restored as quickly as possible—that saved money—but also he was to be restored with as little cost as possible. Another advantage the employer had in the choice of the physician was that all records of findings, diagnoses and treatments were in his control. The abuses that arose could easily have been foreseen—in fact, medical societies yearly urged changes in the law so that the abuses might be prevented. Commercial clinics engaged doctors unable to otherwise earn a living, many of them unlicensed in this State. The owners of the clinics had nurses to do much of the work and laymen for clinical help and as the go-getters for business. Private insurers, too, have been found with ex-orderlies on their staffs, or former medical students, though when danger threatened—that is, danger of large disability losses—great haste was made in securing doctors of real ability and repute. Some employers, in fairness it must be said, especially when the location of their plants permitted, did engage properly qualified doctors, did pay them a decent

salary and did have some personal interest in the disabled workman.

The insurance carriers found it was cheaper to have clinics of their own, or panels of some doctors for emergencies. Under the law, the insurance companies acting under authority from the employer have the right and have exercised that right of "lifting" any patient at any time from any doctor that may be attending him.

Time, as ever, has wrought many changes. It seems ridiculous to say that Business has learned that the cheapest service is not always the best and that a low first cost may later become one of great magnitude. It is idle to say that the best service is really the least expensive. Most of the insurance companies in this State have grasped this fact. They learned, too, that in most instances the confidence of a patient in his physician and the responsibility of a physician to his own patient are valuable assets. They also learned that the great majority of physicians are not dishonest. For these reasons they agreed not to enforce the "lifting" privilege the law gave them. They agreed to pay a proper prearranged schedule of fees and to arbitrate these questions when in dispute. On the other hand they found themselves recompensed in the fuller cooperation between the doctor and themselves in obtaining records, in arranging consultations and operations, in allaying the animosity of the medical profession to the companies, and in the encouragement to more good men to do industrial work. All the wrinkles have not yet been smoothed, but the few years of this present plan have demonstrated that the selection of a physician by the sick person has not been fraught with the dangers feared and has had many compensations.

The experiment at Binghamton, New York, sponsored by the Spaulding Bakeries, Inc. and reported by Dr. M. S. Bloom (*Journal A.M.A.* Vol. 100, No. 23. Page 1869. June, 1933) sheds some light on the question. Having tried other plans with only qualified success they introduced the plan of absolute free choice of doctor to their employees in the Mutual Benefit Association. The officers of the company were convinced that confidence in the personal relations of the patient and physician was a "tremendous advantage." There was some misgiving about the final total cost, though an existing reserve was an assurance. In the applied plan in addition to the medical care, hospital, laboratory and disability payments were made. During the experiment sixty-five different doctors and twenty-five dentists were consulted. At the end of the year, not only was this reserve fund untouched but it had been increased by the unused part of the regular dues and contributions. The employees have been well cared for, the profession has been pleased, the experiment has been ordered continued indefinitely, and the officials of the

company who are responsible for a large share of the funds may "extend the plan to the eight other bakeries operated by Spaulding Bakeries in New York State and Pennsylvania."

Present Status of the Theory of Vascular Peristalsis as a Motive Factor in the Circulation

(Concluded from page 268)

latter is elicited by arterial ligation. (2) The peripheral vascular mechanism may be inhibited by the combined action of local vasodilator substances (chloroform, etc.) plus the destructive effect on the vasomotors by nerve section or spinal pithing."

J. C. Sandison in 1932 said⁷: "Before Stricker ('65) saw the phenomenon of independent contraction of capillaries in the nictitating membrane of the frog, these vessels were thought to respond to circulatory changes in a passive manner only, the flow of blood being regulated entirely by the contraction and dilatation of vessels surrounded by muscle cells."

Sandison also reports⁷ the following observations on the circulation in the rabbit's ear.

"The contraction sometimes appears first in the main artery of the ear, which narrows markedly, and may extend in a wave along the arteries and their branches and arterioles until the last smooth muscle is reached, three or four seconds being taken up in the passage of the wave from large artery to arteriole. . . . The narrowing in the different parts of the arteries may be partial or it may be sufficient to block completely the flow of the blood. . . . The smooth muscle cells on the large arteries remain contracted for long periods under certain conditions, while the muscle cells on the arterioles rarely remain contracted for more than a few seconds. . . . It will be seen that the arterioles contract at the places where the smooth muscle cells are present, and that the vessels beyond the last cell narrow only to a very slight extent, if at all. . . . When undergoing a contraction it (smooth muscle cell on an arteriole) causes a rapid narrowing so that, in the course of two or three seconds, the lumen may be so constricted that no blood can pass. It remains constricted three or four seconds and rather suddenly relaxes, the relaxation being followed by a rush of blood through the vessel. . . . The periods of relaxation are definitely longer after the partial contraction. . . . The independent contraction of the arterioles (i.e., one vessel being closed at the time that another is open) causes blood to be fed to the veins through the capillaries and vessels in a broken stream. . . . A very slight pulse is usually present in all young capillaries. . . . It is difficult to explain the general pulsation which may occur in veins and capillaries when the circulation is extremely fast, as for example, when the ear has been heated to 38° C or above. . . . The rhythmic contractions in the arterial walls are more regular at this (38° C) temperature."

Le Prince Maurice Villaret in 1932 said⁸: "Celles-ci [études expérimentales] nous montrent quelle large autonomie possèdent, dont leur fonctionnements souvent opposés, les différents parties du système circulatoire; ils nous font apparaître ce dernier comme un ensemble harmonieux mais infiniment complexe, dont les divers territoires sont accordés de façon variable. On conçoit des lors combien le connaissance d'un seul élément de cet équilibre circulatoire, comme par exemple, le chiffre de la pression dans les grosses artères des membres, est insuffisant pour reseigner sur le totalité du système."

The theory of the circulation which considers that the cardiac contractions constitute a certain concentration

and special development of the intrinsic motive force of the circulatory apparatus, but not a complete monopoly of that force, and which predicates vascular peristalsis to be an important intrinsic motive factor of the circulation, would seem, from the review of its case above given, to have a standing in the court of science. Pending the final decision on its case, it is interesting to note how well this theory illuminates some dark places in physiology, pathology and therapeutics.

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Correspondence

Illegal Subpoenas

Editor, THE MEDICAL TIMES,

In your issue of the "Medical Times and Long Island Medical Journal" of August, 1933, at page 254 in an article on "illegal subpoenas" you state that "in order to be legal a subpoena must be signed by the clerk of the court and his seal must be on it."

This is contrary to law and since it may mislead a large number of members of the medical profession for which I have the highest regard, I am writing this letter to correct the article.

As Carmody says in Vol. IV. of his New York Practice, at page 2753:—

"The Attorney for the party is authorized to issue the subpoena without application to the court or judge by signing it himself, and attesting it in the name of a judge of the court and of its clerk and such is the universal practice."

Very truly yours,

ARTHUR S. WEINBERGER.

New York, August 9, 1933.

Note: We are glad to have Mr. Weinberger correct us on this point. Scheffel, Medical Jurisprudence, Blackiston, 1931, p. 169, says: "a subpoena is usually signed by an officer of the court issuing it and should be stamped with the seal of the court or other tribunal." Apparently this is not necessary in some states, as Mr. Weinberger has pointed out. Scheffel gives the following opinion as to those qualified to serve a subpoena: "Generally, it may be legally served by any officer of the court, police, sheriff, constable, process-server, or other person legally authorized to serve such papers in the state." Fake subpoenas are often sent out through someone who is not qualified to do so. Since the law varies in different states, all physicians are advised to look into the matter carefully and to make sure that they are properly served.

—M. W. T.

Röntgenographic Visualization of Subperiosteal Hemorrhage in Infantile Scurvy

WALDO E. NELSON, WILLIAM M. DOUGHTY and A. GRAEME MITCHELL, Cincinnati (*Journal A. M. A.*, July 1, 1933), present four cases of infantile scurvy to emphasize the fact that subperiosteal hemorrhages in infantile scurvy may not be visualized on the röntgenogram until calcium salts are deposited in the periosteum. This deposition depends on the administration of vitamin C. When the röntgenogram demonstrates that calcium is present in the periosteum surrounding the hemorrhage, it indicates that vitamin C has been given and that healing is proceeding. Unless serial röntgenograms are taken after the administration of vitamin C, the diagnosis of subperiosteal hemorrhage may be overlooked.

Contemporary Progress

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Neurology

Organic Functions in Schizophrenia

R. G. Hoskins and F. H. Sleeper (*Archives of Neurology and Psychiatry*, 30:123, July, 1933) report a study of physiologic functions in 57 male patients with schizophrenia. Repeated tests were made on these patients over a period of seven months. The average age of the patients was 31.7 years, and the average period of hospitalization five and nine-tenths years. These patients in most respects were originally normal, but they averaged 16 per cent underweight, and showed a high incidence of poor circulation of the skin, irregularities of the pupils and poor teeth. The blood pressure, the rate of oxygen consumption and, to a slight extent, the pulse rate were basically depressed; the level of protein metabolism showed no significant correlation with the rate of oxygen consumption, as it did in the control series. These findings indicate "hypometabolism" as characteristic of schizophrenia. The urinary constituents were normal in amount, but the total volume of urine was twice the normal and the variability of output three times as great as in the normal controls. In the authors' opinion this indicates abnormal functioning of the diencephalon or the posterior lobe of the pituitary. The galactose tolerance was very variable and averaged below the normal. Blood counts showed a high incidence of moderate secondary anemia and leukocytosis; the differential counts were essentially normal. Clinical analysis of the blood showed an abnormal variability in the different constituents, but the averages were mostly normal; the cholesterol content ranged somewhat low. Various functional tests of the liver indicated some hepatic insufficiency of variable types in a considerable percentage of cases. On the basis of Cannon's theory that physiological efficiency—even survival, depends "on the operation of mechanisms for the maintenance of a 'steady state' in the organism—'homeostasis,'" the authors' findings in these cases indicate that "schizophrenia is characterized by two deviations from normality. The ability to maintain the 'steady state' is diminished, and some functions are basically displaced in an upward, others in a downward direction."

The Central Nervous System in Diseases of the Liver

L. A. Crandall and A. Weil (*Archives of Neurology and Psychiatry*, 29:1066, May, 1933) report animal experiments in which hepatic damage was produced in dogs by ligation of the common bile duct or the pancreatic duct; it was found that approximately on the fourth day after operation substances appeared in the serum which acted destructively on the spinal cord of rats in test tube experiments. The changes in the central nervous system of animals (dogs and rats) in which the hepatic damage had been produced were also studied. It was found that the toxins in the blood were eliminated through the choroid plexus or through the wall of the cerebral vessels, and that the damage to the nerve tissues was most pronounced at the place of elimination and highest concentration. This was characterized by a spongy necrosis of the walls of the ventricles or by foci of edema and demyelination in the cortex. In all instances a diffuse disease of the nerve cells was found; there was proliferation of the glia with the formation of dense "felts" of fibrous glia. The mesenchyme was not involved. In these animal experiments the direct relation between liver disease and the pathological changes in the brain is more evident than in human material. But in comparing the histopathological changes in Wilson's disease, pseudosclerosis, and other cases of lenticular degeneration associated with hepatic disease showing similar symptoms with their findings in these animal experiments, the authors note several common features: Spongy necrosis of nerve tissue,

active proliferation of glia with the formation of large, round or oval nuclei, diffuse nerve cell disease with predilection for the deep cortical layers and the striate body, and absence of active mesenchymal reaction.

Physiological Studies Following Extirpation of the Right Cerebral Hemisphere in Man

W. E. Dandy (*Bulletin of Johns Hopkins Hospital*, 53:31, July, 1933) notes that attempts to localize cerebral function in man on the basis of the effects of cerebral tumors or degenerative processes lead to contradictory results, because the disturbances produced by these lesions are not restricted to the area of the brain that they occupy. The author reports a study of 3 cases of brain tumor in which the entire right cerebral hemisphere was extirpated. One of these patients lived over two years after operation, one six months, and the other only a few days (death due to postoperative meningitis). In these cases no defect in mental function resulted from the removal of "such vast areas of brain tissue." In one case in which the patient showed pronounced mental changes before operation, these cleared up after a preliminary operation for the relief of intracranial pressure and remained absent after the extirpation of the cerebral hemisphere. In these cases hemianopsia was complete; smell, taste and hearing were present; the function of the trigeminal and facial nerves was nearly normal, with slight diminution of all forms of sensation in the area of the trigeminal in one case and a slight diminution of motor power of the facial nerve in both cases that survived the operation. There was left-sided hemiplegia, practically complete except for slight power of movement of the leg, which was of no practical value. The extremities on this side were markedly flaccid; there were no contractures and very little if any resistance to passive movements. The preservation of sensation in the joints and deep muscles in these cases indicates that there are sensations that are mediated at a lower level than the cortex.

A Study of Postural Persistence in Cases of Postencephalitis

L. S. Selling (*Journal of Nervous and Mental Diseases*, 78:24, July, 1933) reports a study of "postural persistence" as defined by Schilder and Hoff in cases of postencephalitis. Schilder and Hoff found that when both arms were raised horizontally forward with the palms down, then the left arm was depressed to an angle of 45° and both arms subsequently raised to the horizontal again, the arm previously depressed was slightly below horizontal. This test was made by the author with the patient blindfolded and by depressing the left hand for twenty seconds, measuring the deviation between the two hands in centimeters. In normal persons fifteen to twenty-five years of age, the difference in the level between the two hands was found to vary from 3 to 7 cm. In 32 cases of postencephalitic Parkinsonism, the difference between the two hands with this test was never over 3 cm., and varied from 0 to 3 cm. In 24 of these cases there was no deviation in over half of the trials, i.e., the two hands were found to be parallel. In 10 other cases of postencephalitis studied, without definite Parkinsonism, the range of deviation was 0 to 6 cm., more nearly approaching the normal, but indicating some loss of postural persistence; in 4 of these cases, there was no difference in the level of the two hands on repeated trials. The author concludes that the presence of this phenomenon seems to be independent of the pathological changes in the brain that occur in encephalitis unless the area in which the Parkinsonian symptoms arise is affected.

Involvement of the Facial Nerve in Malignant Hypertension

J. Q. Griffith (*Archives of Neurology and Psychiatry*, 29:1197, June, 1933) notes that malignant hypertension may pro-

duce a clinical picture suggestive of "a mass lesion of the brain" with headache and choked disc, and that in some cases paralysis of a cranial nerve, usually the facial nerve, may still further confuse the diagnosis. The author reports such a case in a girl eighteen years of age, who, when first seen, had severe frontal headache with nausea and vomiting, choked disc, and was recovering from a right peripheral facial paralysis, with a history of a similar attack of facial paralysis a year previously. The blood pressure was 240 systolic and 148 diastolic. The patient died while under observation, but autopsy was not permitted. The author summarizes 8 other cases from literature in which facial nerve paralysis was associated with malignant hypertension; in 4 of these cases some other neurological lesion was present. Four patients had multiple attacks. It should be recognized, therefore, that facial nerve paralysis may occur in malignant hypertension; this does not seem to modify the course of the malignant hypertension in any way, but such hypertension is one of the most serious etiological factors in facial paralysis. The facial paralysis in these cases is probably caused by one of the following conditions: (1) hemorrhage within the facial canal; (2) hemorrhage in the pons; (3) pressure by an artery on the nerve trunk between its point of origin from the pons and the internal auditory meatus; (4) involvement of the nerve in the same area as part of an increased intracranial pressure.

Physical Therapy

A New Method of Radiotherapy in Leukemia

G. Marchal and L. Mallet (*Bulletin et mémoires de la Société médicale des hôpitaux de Paris*, 49:737, June 12, 1933) describe a new method of Roentgen-ray treatment of the leukemias, first used by Teschendorf in 1929-1930. The principle of the treatment is to irradiate large fields, or the entire body, with small doses of hard X-rays. As the authors consider that there is a definite risk in irradiation of the entire body in a single treatment with present equipment, they have adopted the following technique: 200,000 volts, 3 milliamperes, 1 mm. copper + 2 mm. aluminum filtration; distance, 1.70 to 2 meters; two fields, 1 meter in diameter, anterior and posterior, are given a dosage of 25r each at one treatment, a total dosage of 50r; two or three treatments are given weekly until the entire body has been treated. The duration of treatment varies in each case; repeated series of treatments are given as indicated. The authors are seeking to develop a safe and satisfactory method for irradiation of the entire body at one treatment. They have treated 6 cases of leukemia with this method and have found that the disease can be controlled and the symptoms relieved to better advantage than with the usual methods of radiotherapy, without causing severe anemia, without injury to the skin, and without developing radioresistance.

Ultra-Violet Radiation in the Prevention of Common Colds

G. H. Maughan (*Archives of Physical Therapy*, 14:335, June, 1933) notes that at Cornell University students who were especially susceptible to colds were divided into three groups: one group given two ultra-violet light treatments weekly; one given cod-liver oil in addition to the light treatments; and one control group. The maximum length of exposure in the ultra-violet light treatments was six minutes to the front and six minutes to the back of the body; a Hanovia quartz mercury light was used. In the first two years the reduction in the number of colds in the irradiated groups was 44.2 per cent in the first term and 55.5 per cent in the second. Since this experiment with relatively small groups, relatively large groups of "cold-susceptibles" among the students were treated with ultra-violet radiations in a specially equipped solarium. The incidence of colds was reduced 42.7 per cent in the first semester and 58.7 per cent in the second semester in the men so treated. As the treated group included many chronic cases of sinus and other respiratory infections, a greater percentage of benefit can be expected in persons without such chronic infections. Other methods are necessary in addition to ultra-violet radiations in dealing with chronic sinus infections.

Artificial Sunlight in Minor Ailments

E. J. Macintyre (*British Journal of Physical Medicine*, 8:22, June, 1933) reports that at Bermondsey (England) Solarium, children suffering from malnutrition and debility have been treated by generalized exposure to artificial sunlight with the result that the great majority showed satisfactory gains in weight, increased vitality, general improvement in nutrition and color, and freedom from minor symptoms. A well-balanced diet is, of course, a necessary part of the treatment of such cases, but it was found that the use of cod-liver oil did not affect the rapidity or the degree of improvement in children who were treated by irradiation. In the author's opinion, "the

chemical action of the oil cannot replace the mechanical stimulating influence and general physical effect of the exposure of the nude body to ultra-violet rays and mild air currents." Colds and mild catarrhal conditions are treated by ultra-violet rays applied locally by means of quartz applicators and general body irradiation. Rheumatic children are definitely benefited by the artificial sunlight treatment. The circulatory system becomes "more competent" under the light treatment. Adult patients with arteriosclerosis have been definitely benefited, with relief from pains, head noises and giddiness. As the excretory system may have "an extra burden to bear" because of the increased metabolism resulting from the light treatment, the treatment must be carefully graduated if there is any sign of renal disease. The author has found that recovery from acute nephritis is hastened by treatment, but that cases of chronic renal disease with gross albuminuria do not react well, and should be excluded from treatment.

Electrocardiographic Control of Diathermy in Angina Pectoris and Coronary Artery Disease

A. S. Hyman (*Archives of Physical Therapy*, 14:270, May, 1933) reports electrocardiographic studies of 87 cases of chronic coronary thrombosis under treatment by diathermy. The diathermic treatment was used only in chronic cases, at an interval of at least six months after the last acute seizure. Block tin-foil electrodes were used, applied directly to the skin of the precordium and the back. The anterior electrode was 3 x 5 inches, and the posterior electrode three times as large; the electrodes were so placed as to focus the current through the mass of the heart muscle; in general a current of 100 milliamperes per square inch of the smallest electrode was employed. The first two treatments were five minutes in duration; then the duration of each treatment was increased by five minutes up to forty minutes. In the great majority of the cases treated symptomatic relief was obtained by the diathermic treatments, even when drug therapy had failed. Simultaneously with the clinical improvement, there was a change in the electrocardiogram. The previous negativity of the T-waves was lessened at first, and finally the T-waves became positive. In a small group of cases, there was definite clinical improvement although the electrocardiograms showed no changes under treatment, but as a rule the author is of the opinion that if there is no change in the T-waves in the direction of positivity after several diathermic treatments in any case of coronary artery disease, the patient is "not a proper subject for this mode of treatment."

Therapeutic Fever Produced by Diathermy

J. C. King (*Radiology*, 20:449, June, 1933) describes the method used by him for producing therapeutic fever by diathermy and reports results obtained with this method by himself and others. The machine used is of the vario-frequency type capable of producing 10,000 ma. By use of a special voltage divider, constructed by H. D. Roop, two patients can be treated at the same time. The electrodes used almost completely cover the anterior and posterior surfaces of the trunk, are adjusted so as to fit snugly to the skin surface and so that the distance between the anterior and the posterior electrode is equal at all points; they are held in place by a jacket with elastic straps. No conductive material is used on the surface of the electrodes. Treatment is carried out with the patient in bed, wrapped in rubber sheets and blankets to prevent heat loss. As the patient feels considerable discomfort when the temperature is brought to 102° or 103° F., sodium amyta is given per rectum immediately preceding treatment. The current is increased gradually from 5,000 to 7,000 ma. in fifteen minutes; it is kept at that milliamperage until the temperature is within 1° F. of the level desired and then shut off. Temperature, pulse and respiration are recorded every fifteen minutes from the time the current is turned on until the temperature returns to normal. The author's first use of this method was in paresis; the results have been better than with malarial injections, with an increased percentage of good remissions; similar results have been reported by others. Equally good results have been obtained with other forms of neurosyphilis but in a smaller series of cases. For the best results the author recommends intravenous antisyphilitic medication just before the diathermy treatment. The author has also used this treatment in cases of chronic arthritis of both the hypertrophic and the atrophic type. The results have been "most striking," as every patient has noted some relief of pain, increased motion of the joints, improved color of the skin, and a sense of general well-being. In a number of cases complete relief has been obtained; the author advocates the continued use of treatments at gradually increasing intervals for a long period after the maximum degree of relief is obtained. Diathermy also offers the best means of treatment of thrombo-angiitis obliterans, as it dilates the capillary bed to the fullest extent without an

initial vasoconstriction. The author notes that fever induced by diathermy has also been used by others in the treatment of bronchial asthma, multiple sclerosis, and chorea, but the results obtained are "not commensurate with" those secured in paresis and arthritis.

Public Health, Industrial Medicine, and Social Hygiene

Application of the Principles of Water Purification to Swimming Pools

A. H. Fletcher and A. E. Clark (*American Journal of Public Health*, 23:407, May, 1933) report a study of outdoor swimming pools in Memphis, Tenn., and a few other pools in other cities. It was found that satisfactory residuals of chlorine could not be obtained in the swimming pools studied if chlorine or chlorine compounds alone were used; but the maintenance of satisfactory residuals was practicable if chlorine and ammonia were used. Hand application of chlorine and ammonia was not as satisfactory as continuous application by machine. When satisfactory chlorine residuals were obtained the bacterial count of the pool water was low. As this study indicated that the water in swimming pools can be maintained at a standard that will meet the bacteriological standards for good drinking water, the City of Memphis has passed a city ordinance requiring that all swimming pools must be brought up to certain standards, but allowing "a period of grace" for this to be done. The City has also adopted a method of rating the pools according to the bacteriological standard of the water, and announcing these ratings four times a year—a procedure that has definitely hastened the improvement of the hygienic conditions in swimming pools. While the control of swimming pools rests primarily upon the local government, the authors are of the opinion that the State Department of Health should participate in promoting swimming pool control programs and in obtaining standardization of requirements throughout the State.

Milk-Borne Diseases in Massachusetts

G. H. Bigelow and R. F. Feemster (*American Journal of Public Health*, 23:571, June, 1933) report a study of milk-borne diseases in Massachusetts in the years 1930-1932. In this period the per capita consumption of milk had not decreased, but there was a definite decrease in milk-borne diseases as compared with previous years. There was a diminution in the number of outbreaks of disease traced to milk, and also a diminution in the number of cases per outbreak, indicating that the larger milk supplies are now well protected by sanitary regulations, and it is mainly the small supplies, with milk delivered raw, that are continuing to spread disease. In the three years covered by this study, there were in the State 5 outbreaks of septic sore throat, 3 of typhoid fever (including 2 of one case each) and one of scarlet fever traced to milk. In only one of these outbreaks was pasteurized milk involved, in which the milk handler in the pasteurizing plant had a mild case of scarlet fever. It is estimated that 85 per cent of the milk supply of Massachusetts is now pasteurized.

Lead Dust and Fumes in the Air of Streets and Industrial Establishments

J. J. Bloomfield and H. S. Isbell (*Journal of Industrial Hygiene*, 15:144, May, 1933) report a study of the amount of lead in the air in city streets, industrial establishments not using lead, and automobile repair shops in 14 cities in the United States. The samples of air were all taken at "the breathing level." Care was taken to prevent any possibility of contaminating the samples with lead; containers were of the lead-free type, and all reagents used in chemical analyses were tested for lead. In the street tests, attempts were made to determine the relation between the amount of lead in the air and such factors as wind velocity, width of streets and traffic volume; in the automobile repair shops such factors as area of openings and exhaust ventilation were studied, but none of these factors were found to be important. It was found that 86 per cent of all samples contained less than 0.2 mg. lead in 10 cubic meters of air. The average for the samples from automobile repair shops was 0.13 mg. and the maximum amount in these shops was 1.11 mg. The average for non-lead using industries was 0.10 mg., the maximum 0.35 mg. The average for street air was 0.09 mg., the maximum 0.34 mg. These findings show that minimal amounts of lead are normally present in the air of non-lead-using industries and of city streets. This fact, the authors suggest, "may in a measure account for the presence of lead in the excretion of persons with no history of industrial exposure to lead compounds."

An Outbreak of Dermatitis in Cotton Mills

L. Schwartz and C. L. Pool (*Journal of Industrial Hygiene*,

15:214, July, 1933) report an investigation of an outbreak of dermatitis in two cotton mills in Rhode Island, where there had been no cases of skin disease previously. The investigation showed that the dermatitis developed only in workers coming in contact with heddle frames that had been newly installed on the looms. The dermatitis began on the forearms, which came in contact with these frames when the weavers adjusted their threads; and in some cases it spread both up the arm and down to the hands. Both of the mills where the outbreak occurred had obtained the heddle frames from the same manufacturer, who had used a new type of varnish on these frames, and it was considered that this varnish had caused the dermatitis. Patch tests with the varnish on 13 of the cases showed 12 to be sensitive to the varnish. Eight of these 12 cases were again tested with the various ingredients of the varnish that were suspected of causing the dermatitis—cumaron resin and ceresin. Two of them showed skin sensitivity to both these ingredients; one was sensitive to cumaron resin alone; 4 to ceresin alone; and one to neither ingredient alone, but to the whole varnish. The varnish from the heddle frames was more irritating than the dried fresh varnish. The conclusion was reached that the combination of ceresin containing chlorine and of cumaron resin containing sulphuric and sulphonlic acids in a varnish exposed to a relative humidity of 80 per cent and a temperature of 80° F., coming in contact with the perspiring skin of the forearm, caused a dermatitis in hypersensitive individuals, probably due to the hydrochloride, sulphuric and sulphonlic acids liberated or formed. Whether this hypersensitivity was natural in these individuals, or was acquired by prolonged contact with the varnish, could not be ascertained. The manufacturers of the heddle frames discontinued the use of the varnish, and no further complaints were received from mills using their frames. This illustrates the careful study that must be made to determine the cause of such outbreaks among industrial workers. The management of the cotton mills at first feared that the dermatitis was an infection that might spread through the plant, and hence asked the State Public Health Commission to investigate.

Social Aspects of the Venereal Disease Problem

F. S. Carney (*Canadian Public Health Journal*, 24:316, July, 1933) discusses the venereal disease problem from its social aspect, rather than from its economic or medical aspect. "The whole problem of venereal disease," he says, "is so complicated by elements of prejudice, tradition, sentiment, false modesty and certain conventional religious attitudes that its solution has in the past baffled the sporadic efforts of many social workers." The social evils involved in venereal disease may be divided into three groups: (1) those arising out of congenital syphilis; (2) intra-marital infection; (3) and extra-marital infection. The congenital syphilitic too often becomes a real social problem—"a physical and mental derelict and a burden to himself and humanity." Intra-marital infection results often in life-long invalidism of the wife, and either in sterility or in infection of the children. The problem of extra-marital infection is the problem of sexual morality—of right instruction and training of youth. In dealing with this problem, "it will be necessary at the outset to get rid of the old bogey that venereal diseases are a just punishment for immorality." The problem must be dealt with by proper education in regard to sexual physiology and hygiene, as well as by furthering character development in and outside of the home; and, while the venereal diseases are still prevalent, by providing adequate means for treatment of those infected; and prophylaxis through early post-exposure treatment. There are many agencies at work on various phases of the venereal disease problem; but in Canada the "urgent need at this time," the author believes, "is for some individual or body to undertake the assembling of the various branches of the anti-venereal disease army, unify them into one composite whole and co-ordinate their efforts."

Ophthalmology

Retrobulbar Neuritis and Disease of the Nasal Accessory Sinuses

W. L. Benedict (*Archives of Ophthalmology*, 9:893, June, 1933) notes that the typical syndrome of retrobulbar neuritis consists of lowered visual acuity, which may occur suddenly or gradually, some form of scotoma, usually central, and a nerve head of normal appearance. The effects of disease of the nasal accessory sinuses on the optic nerve are not yet established; there is a considerable difference of opinion as to the rôle played by accessory sinus disease in the causation of optic neuritis. The author's observations at the Mayo Clinic lead him to conclude that this rôle is negligible. Even in the presence of dehiscences in the bony walls in disease of the

Medical Times

& LONG ISLAND MEDICAL JOURNAL (CONS.)

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Disinfection and Convalescence

Successful application of the National Recovery Act and other governmental measures designed to resuscitate a partially asphyxiated nation should put a final quietus upon that type of business man whose stupidity and greed brought the depression upon us. It was this type of incompetent who was boldest in arranging the destiny of the medical profession, not so long ago, to suit his immoral social schemes. A preposterous figure today, his former arrogance means nothing. Along with his narcotics this charlatan has slunk into an obscure alley. At the hands of another doctor the nation's cyanosis and dyspnea are disappearing.

When social justice enters in the uplifters "scram." With improved conditions one already notes a rational demand for well-trained general practitioners, who, under a decent economic dispensation, can function properly, unterrified by doctrinaires, rabble-rousers, propagandists, and public nuisances of all sorts.

It looks as though we are not, after all, in the words of Dr. William J. Mayo, going to lose sight of the importance of "taking care of the sick." That is because we are not going to be bedeviled for awhile.

The curse is lifting.

Dangerous Foods

The United States Department of Agriculture, in recent judgments under the Food and Drugs Act, includes the following items: excessive mold in canned blackberries; decomposed sardines, tuna fish and salmon; excessive mold in tomato catsup; decomposed canned sweet potatoes; butter below standard weight of milk fat and below weight designated on package; decomposed canned shrimp; celery containing arsenic in amount which might have rendered the article injurious to health; decomposed canned prunes; cheese deficient in fat and containing excessive moisture; canned tomatoes containing an excessive amount of blemished and excessive peel; dried cherries which were insect-infested, moldy and dirty; dressed poultry which was in part diseased and decomposed; arsenic and lead in dangerous quantities in raw apples; dried grapes which were decomposed and insect-infested; cabbage containing excessive amounts of arsenic; olive oil samples containing little or no olive oil, and of domestic manufacture when the label indicated that it was a foreign product; walnut meats which were in part decomposed, moldy and wormy; dried split prunes; wormy, decayed and dirty; fresh blueberries found to contain maggots.

No doubt many of the foods we eat contain excessive amounts of arsenic and lead. In many instances the urines of patients show the presence of these chemicals. Perhaps not all cases show clinical symptoms but one wonders what part lead may play in some chronic conditions. Also in many cases of apparent sinus disease where there is a nasal discharge and the eyelids are swollen, it might be well to consider the possibility of arsenical poisoning from food, in sensitive patients.

M. W. T.

Genuine Interest May Cover Sin

The busy practitioner of an older day who kept no elaborate records was very often a man who had a marvelous faculty for remembering patients and the details of their ailments, not to speak of many circumstances of their lives other than the strictly medical. Nowadays we are so dependent upon our card-index systems that the human side of things tends to fail. Actually we may not know our patients nearly so intimately as did the older type of practitioner. We are not holding a brief for any let down in modern methods; far from it; but we are making a plea for a more sincere approach to sick persons and their general affairs, and incidentally defending the older man against criticism which at times approaches shallow and uninformed aspects.

Sex-Informed Youth

One does not seem to hear very much today about education of the young in matters pertaining to sex. There used to be a flood of books, discussions and prosecutions. Is it possible that it is no longer necessary to teach anything about sex to the young? Have they all grown up, are they born full of mature wisdom—if not experience—or is the age of understanding and enlightenment reached at six or eight?

Apropos of this matter is a remark by Robert L. Duffus. Speaking about Marshall's book on Arctic village life, which it seems is pretty free sexually, he said: "Mr. Marshall goes fully and frankly into this aspect of life on the Koyukuk, though he says nothing that a modern child could not safely allow its parents to read."

It appears to be the parent who is unsophisticated—and possibly in need of instruction by the younger generation.

"Mistress of Her Own Body"

In his recently published book, "The Story of Childbirth" (Doubleday, Doran and Company), Dr. Palmer Findley writes as follows with respect to child-spacing: "Modern woman, be she Catholic, Jew or Protestant, is asserting her rights as mistress of her own body and is claiming her right to protect those who are intrusted to her care. She is determined that no institution and no group shall dictate her conduct in the rearing of her family. Her duties and her obligations in the home are hers and not the concern of any group of individuals who presume to dictate her conduct with regard to her family relationships."

If Dr. Findley means exactly what he says we are in agreement with him. He says *any group* of individuals. We take it that the dictatorship of the birth control propagandists is just as objectionable to him as that of *any other group*. Today self-respecting and intelligent women determine these things for themselves; no up-lifters can do this for them in the long run, no matter what force they may bring to bear and no matter how much they may be aided by temporary economic conditions.

Biologic servitude of any type should not be enforceable from any quarter.

Miscellany

From the Minutes of the Sepsisville Academy of Medicine, Meeting of Jan. 3, 1935

An amendment to the Hippocratic Oath was proposed at the January meeting of the Sepsisville Academy of Medicine by Dr. A. Strange Schizoid. The proposal will be discussed at the February meeting of the Academy before being put to a vote. Eminent proponents of Leningrad methods will speak for the amendment. The amendment proposes to add to the second paragraph of the Oath the following words: *but I shall myself, after determining medical, social and economic indications in a given case, empty the uterus, employing approved methods, if in my judgment the procedure is in order and if it be legalized by existing statute.* The paragraph would then read: I will follow that method of treatment which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to anyone if asked, nor suggest any such counsel; furthermore, I will not give to a woman an instrument to produce abortion, but I shall myself, after determining medical, social and economic indications in a given case, empty the uterus, employing approved methods, if in my judgment the procedure is in order and if it be legalized by existing statute.

It is being said by opponents of the proposal that "economic indications" would probably be interpreted very broadly, to say the least, by practitioners of the stamp of Dr. Schizoid and his colleagues. Some wonderment is also being expressed by certain naive physicians as to the mental processes whereby Dr. Schizoid and his associates find it easy to repudiate the old implications of the oath once taken, we must assume, in sincerity, and to invite other physicians to join them in their effort to desecrate cherished altars.



ASSOCIATED PHYSICIANS OF LONG ISLAND

The one hundred and fifth regular meeting and scientific session of the Associated Physicians of Long Island was held at the Lido Country Club in Long Beach, Long Island, Tuesday, June 20, 1933. This meeting was well attended and the members who were present were rewarded by a good dinner and fine program which was enthusiastically received; in fact, the attendance record for the past four years was broken. The spirit of camaraderie which has been so marked in the recent meetings was noted in this meeting in greater amount than ever, and bespeaks flourishing times for the Association.

During the afternoon, while some played golf on what is conceded to be one of the sportiest courses on Long Island, the other members joined Dr. William Browning, Dr. Joshua Van Cott, Dr. William Ross, Dr. Frank Overton, Dr. Walter Truslow and Dr. Jaques Rushmore and others who dropped in on a round of swapping stories which solved all the problems of the world. Those who found the tobacco smoke was getting a bit thick strolled on the boardwalk and enjoyed the privileges of inspecting the whole club.

The business session at six o'clock was called by the president, Dr. William J. Malcolm of Jericho, L. I. Dr. Harold R. Merwarth, chairman of the membership committee, recommended the following names of physicians whose applications for membership had been received and acted upon favorably by the committee: Henry S. Acken, Jr., 632 Second Street, Brooklyn; Coburn A. L. Campbell, Port Jefferson, L. I.; Giuseppe A. W. D'Andrea, 99-30 41 Avenue, Corona, L. I.; Anthony R. Giambalvo, 101-30 Woodhaven Blvd., Ozane Park, L. I.; Morris Robert Keen, Patchogue, L. I.; John J. Masterson, 401-76 Street, Brooklyn; Victor C. McCuaig, 12 Oak Lane, Glen Cove, L. I.; Oscar P. Schoenemann, 209 Lincoln Place, Brooklyn; Walter F. Stillger, Hicksville, L. I.

A motion was passed instructing the secretary to introduce an amendment to the By-Laws at the annual meeting doing away with the committee on humanities which has become obsolete. Dr. Elias H. Bartley of Brooklyn was unanimously made an emeritus member as a reward for his long membership since the founding of the association thirty-five years ago. It became the sad duty of the secretary and Dr. Henry P. de Forest to draw up resolutions expressing the grief of the Association and offering sympathy to the family of Dr. Gordon Gibson, our first vice-president, whose loss we mourn.

The scientific program followed the dinner and we are indebted to Dr. Benjamin W. Seaman, Chairman of the Scientific Committee, for the excellence of the program. Dr. Seaman introduced Dr. Clyde LeRoy Deming of Yale University School of Medicine, who journeyed down to Long Beach from New Haven, Connecticut, for the express purpose of addressing the meeting, and for which the association was extremely grateful. Dr. Deming is a urologist of great ability and is the author of many important contributions to surgical periodicals. His address, illustrated by lantern slides, was upon the subject of "Interpretation of Abdominal Symptoms Referable to Urological Lesions", and he covered the subject swiftly but completely. The comments heard informally after his address were all of admiration. The Associated Physicians expressed their appreciation of Dr. Deming's address by adopting heartily the proposal of Dr. William Browning making him an honorary member of the association.

This summer meeting was another feather in the hat of the president, Dr. William J. Malcolm, whose influence has brought back into active membership many who were lagging and some who had even resigned, so the breaking of attendance records was a fitting tribute to Dr. Malcolm. He wishes to thank all those who attended and urges you who read this report to attend the October meeting and enjoy the friendship of those who wish you well.

DAVID EDWARD OVERTON, M.D., Secretary.

Preventive measures for tetanus: 1500-3000 units of antitoxin at time wound is thoroughly cleansed. If wound is not healthy repeat injection each week until there is definite improvement.

Some epidemiologists do not expect another outbreak of poliomyelitis until 1938. However, they look for an outbreak of cerebrospinal meningitis this winter.

MEDICAL BOOK NEWS

Edited by WILLIAM HENRY DONNELLY, M.D.

All books for review and communications concerning Book News should be addressed to the Editor of this department at 1313 Bedford Avenue, Brooklyn, New York.

SEPTEMBER, 1933

REVIEWS

Obstetrics and Gynecology

OBSTETRICS AND GYNECOLOGY. Edited by Arthur H. Curtis, M.D. Philadelphia, W. B. Saunders Company, 1933. Volume I. 1165 pages, illustrated. 8vo. Cloth, Price per set, \$35.00. (To be published in three volumes and a separate desk index.)

A new departure in textbooks, a distinct innovation, apparently intended to become an encyclopedia of obstetrics and gynecology in three volumes. The list of contributors is imposing, containing many great names. Thorough revision is planned from time to time.

The specialist will find the book interesting and helpful, and the general practitioner searching for an authoritative work of reference, will find in its pages an answer to all his questions.

It is perhaps unfair to point out sections of special merit, but Cutter's historical section is one of the best things ever done. The chapters of Novak and Hartman are excellent. A valuable book, profusely illustrated, well indexed and quite up to the Saunders Standard.

CHARLES A. GORDON.

Frontiers of Medicine

FRONTIERS OF MEDICINE. By Morris Fishbein, M.D. Baltimore, Williams & Wilkins Company, 1933. 207 pages. 12mo. Cloth, \$1.00 (Century of Progress Series.)

The publishers announce this as one of a series of volumes by well-known scholars presenting the essential features of those fundamental sciences which are the foundation stones of modern industry.

There are now nineteen other titles in this ambitious and timely series. The author of the happily named *Frontiers of Medicine* was wisely chosen.

The distinguished Editor of the *Journal of the American Medical Association* has achieved successfully the difficult feat of creating a "Cavalcade" of medicine for the layman, in just the right perspective, from primitive magic and mysticism to the prediction of the sex of the child by the fifth month before birth. First and last words are here.

The actors in this thrilling drama are brought to life and, at the command of the gifted "Director," they reenact graphically their historic parts, so significant for medicine. Here is supercinematographic pageantry magically evoked. Magic again, after all! Only it is not "primitive" magic.

If vast majorities of people are to share in the knowledge of medicine, no longer held as a mystery, it can only be through teachers who can be understood—a rare miracle.

ARTHUR C. JACOBSON.

Diseases of Old Age

DISEASES OF OLD AGE. By F. Martin Lipscomb, M.D. Baltimore, William Wood & Company, 1933. 472 pages. 12mo. Cloth, \$4.50.

There are many things to be considered in the care of the aged, some of which seem important, and many of which seem unimportant. All are important to the individual under consideration. The writer has presented carefully the conditions normal to old age, and has discussed the diseased conditions which may occur in the aged. Those states peculiar to normally aged organs require a different course of treatment than in younger patients, and the author gives us a viewpoint into these conditions which we do not always realize. For those interested in the care of the aged, this work will prove instructive, and all who take care of the sick can learn much from this volume.

HENRY M. MOSES.

Crimes and Criminals

CRIMES AND CRIMINALS. By William A. White, M.D. New York, Farrar & Rinehart, [c. 1933]. 276 pages. 8vo. Cloth, \$2.50.

Dr. White, in this work, has added a noteworthy addition to the long list of his contributions to psychiatric literature, which are always so welcome because of his faculty for expressing abstruse ideas in simple and interesting form. There is not much set forth in his book that is strikingly original, but as Dr. White states in his preface, his plea is for the recognition of the importance and significance of obtaining a comprehensive viewpoint when thinking or acting with reference to the great social problem of dealing with the criminal. It is really a series of essays dealing with human relations, illustrated from the field of criminology. Dr. White feels that the methods of dealing with crime and criminals have very largely broken down and that the law and lawyers have continued to think according to the formulas of yesterday and have failed to recognize the advances that have been made in the medical sciences along the line of psychiatry and especially in the understanding of human conduct. Stung by the repeated aggressions of the anti-social element and maddened by the failure of existing machinery adequately to deal with such aggressions, there has resulted a reactionary movement which has usually terminated in putting more "teeth" in the law; but, on the other hand, there is some encouragement to be found in the increasing use of psychiatrists by the courts and the rise of the juvenile courts with their careful individual and social investigation of the youthful delinquent. It is gradually becoming emphasized that it is the actor rather than the act that is to be considered, as we have already reached the stage where no one thinks of killing the obvious maniac, a very young child or the profoundly impaired imbecile and idiot, even though the law has not yet learned to deal with human beings as they are, but deals merely with fictional creatures of the imagination. For anyone interested in the problems of criminology, this extremely interesting work is heartily recommended.

F. C. EASTMAN.

The Wholesome Personality

THE WHOLESOME PERSONALITY. A Contribution to Mental Hygiene. By William H. Burnham. New York, D. Appleton & Company, 1932. 712 pages. 8vo. Cloth, \$3.50.

It is difficult to review this book adequately within circumscribed limits because it is so catholic in its scope. The subject, however, is single in purpose; only the avenues of approach are eclectic and admirably calculated to serve many points of view and many kinds of interest. Carrying on the tradition of his teacher, G. Stanley Hall, the author wisely conceives "personality" as one of the central problems of modern society. It is an acute subject with individuals, in business, in education, social work, medicine and almost every other walk of life. The academic character of Professor Burnham has plainly been mellowed by teaching. He strives for no great, abstract theses. He chooses the homeliest examples. He takes from all sciences the plainest morsels. In the end, the book will do satisfactorily for college students, medical students, social workers, practitioners of medicine, sociologists and makes excellent reading for the intelligent lay person.

In a society which has become increasingly competitive with increasing numbers and opportunities, it is no longer simply a question of ability with the individual. The problem of "getting along" with that ability has grown in importance. The personality is, moreover, not only that in us which puts our ability over, it is primarily that portal through which we are able to

get the most out of life. After rather complete chapters on the physical and emotional backgrounds of personality development, the author discusses his conception of the wholesome personality as represented especially by integration. There follow chapters on the various conditions which foster balance and, also, the emotional and social situations which create pitfalls in the way of gaining personality integration. The latter portion of the book ends on a note of the importance of social forces in personality development, a point of view which is of interest because, as was indicated above, increasing the efficiency and economy of personality expression has become paramount in an age in which social and industrial regimentation threatens to blot out the individual. In other words, look for happiness in yourself and not in the world, an excellent "selling point" for mental hygiene.

The book contains broad leads to further reading in ample bibliographies at the end of each chapter and also at the end of the volume. There is a good index and the arrangement is such as to meet more rigorous requirements than any but specialists would present.

SAM PARKER.

Allergy and Immunity in Ophthalmology

ALLERGY AND IMMUNITY IN OPHTHALMOLOGY. By Alan C. Woods, M.D. Baltimore, Johns Hopkins Press, 1933. 176 pages. 8vo. Cloth, \$2.25. (Monograph No. 1, The Wilmer Ophthalmological Institute, Johns Hopkins Hospital and University.)

As Dr. Wilmer has pointed out in his foreword to this volume—"We are just upon the threshold of our knowledge of immunological adaptation, . . ." Certainly the ophthalmologist is thoroughly impressed that this condition is so, and hence the present work is particularly timely. The words lens-antigens, phage, non-specific parenteral injections, and like terms have long represented a confused mass of material to the ophthalmologist's mind which this volume helps to clarify. The chapter headings are very interesting and the material of the text does not disappoint. Particularly interesting are the sections on trachoma, miscellaneous allergic conditions of the conjunctiva, the chapter on syphilis and that on vaccine therapy. The reviewer would like to have seen a summary of technical methods and the results obtained; at least that part pertaining directly to ophthalmology. The volume is small and compact and would not have been rendered clumsy in any way by its inclusion. All in all, however, the reviewer feels that the work is a real addition to ophthalmic literature.

JOHN N. EVANS.

The Principles and Practice of Surgical Nursing

THE PRINCIPLES AND PRACTICE OF SURGICAL NURSING. By Charles D. Lockwood, M.D. New York, The Macmillan Company, 1932. 344 pages, illustrated. 8vo. Cloth, \$2.75.

This volume does not seem to reflect its title in any respect. Of actual nursing there is but little mention made. It is in every detail a compendium of surgery, including the etiology, pathology, clinical description and treatment of surgical diseases.

It is far too elementary for the accomplished surgeon, too incomplete for the student and quite unsuitable for the nursing staff. In the opinion of the reviewer this volume is not a valuable addition to medical literature, which is already glutted with similar productions.

GEO. WEBB.

Forty Years of Psychiatry

FOURTY YEARS OF PSYCHIATRY. By William A. White, M.D. Washington, D. C., Nervous and Mental Disease Publishing Company, 1933. 154 pages. 8vo. Cloth, \$3.00. (Nervous and Mental Disease Monograph Series No. 57.)

The purpose of this book is to describe in narrative form the development of psychiatry in this country for the past forty years as personally lived through and observed by the author.

There is a description of medical school days at the Long Island College Hospital, near which the author was born and lived. Here he came under the influence of Dr. William Browning and through the latter's recommendation secured his first appointment to a state hospital.

In the early days there were no nurses nor ward employees who had any systematic training whatever. Patients generally were classed as maniacal, melancholic or demented. There was little suggestion that the mental symptoms had meaning back of them. There is then described the transition to the scientific viewpoint of today.

In 1903 Dr. White became Superintendent of St. Elizabeth's Hospital at Washington. In 1904 he was appointed Professor of Psychiatry at George Washington University.

The development of psychoanalysis is described, also the origin and progress of the mental hygiene movement. Finally is related the development of the psychopathic pavilion in the general hospital, together with the appointment of the psychiatrist to the staff of the hospital. In this way has come the escape of the psychiatrist from the state institution.

STANLEY S. LAMM.

Egg, Wheat or Milk-Free Diets

EGG, WHEAT OR MILK-FREE DIETS. With Recipes and Food Lists. By Ray M. Balyeat, M.D., Elmer M. Busten, M.D., and Ralph Bowen, M.D. Philadelphia, J. B. Lippincott Company [c. 1933]. 149 pages, illustrated. 8vo. Cloth, \$2.50.

Egg, wheat and milk are probably the most common foods to which allergic patients are sensitive. Since these foods are found in such a large variety of common recipes, it frequently becomes a problem for the physician treating such patients, to entirely eliminate these ingredients from the patient's diet.

The author has made a compilation of all foods and recipes which contain these three foods. He also has assembled food lists and recipes which are totally free of these three foods.

The book is introduced with a chapter for the layman describing the allergic diseases, their causes and clinical manifestations.

WILLIAM S. COLLENS.

Adventures in Biophysics

ADVENTURES IN BIOPHYSICS. By A. V. Hill, M.D. Philadelphia, University of Pennsylvania Press, 1931. 162 pages, illustrated. 8vo. Cloth, \$3.00. (The Eldridge Reeves Johnson Foundation for Medical Physics.)

Except for those instances in which the author enters the realms of formulae and higher mathematics, the book is written in an informal and interesting fashion. It presents an account of the recent developments in muscle physiology; the success of much of this work having been made possible through the use of the new type of muscle thermopile perfected in Hill's laboratory. With it, the author and his associates were able to test critically their earlier work, together with that of other investigators, and thus arrive at some fundamental conclusions.

The subject of vapor pressure, which appears to have been neglected by other workers, is herewith given its deserved place of importance. Some of the previously unexplainable results obtained in the field of muscle physiology are now readily understood in the light of this new work on osmotic and vapor pressures. The controversial points in relation to the state of water in tissue (as to whether it is "free" or "bound") are discussed in detail. Using the thermal method of measuring vapor pressure, the author found that nearly the whole of the water of muscle is free to exert its normal behavior as a solvent, and only a small part is "bound." The conception of the steady state is presented as being maintained by delicate governors and by a continual expenditure of energy rather than as a result of genuine equilibria. The chemistry and mechanics of muscle contraction, the focus of many years of research by the author are discussed in great detail; the relative positions of phosphogen and lactic acid in the production of energy during contraction and relaxation being clearly outlined.

Although the book is full of scientific data and experimental evidence, the author has presented the contents in such a fashion as to make it not only instructive but enjoyable reading as well.

DAVID I. ABRAMSON.

Diseases of Tradesmen

DISEASES OF TRADESMEN. By Bernardino Ramazzini, 1633-1714. Compiled by Herman Goodman, M.D., with which is bound "Silk Handlers' Disease of the Skin." By Herman Goodman, M.D. New York, Medical Lay Press, [c. 1933]. 95 pages, illustrated. 12 mo. Cloth, \$1.50.

As a result of cases in his clinic service, the author of this hand-book became interested in certain skin diseases developing in workers who handle silk. He describes the various processes of manufacture and the dermatoses which occur in them.

His researches brought the author in contact with the writings of Bernardino Ramazzini in the 17th century on the Diseases of Tradesmen. Dr. Goodman presents a translation in his little book as an introduction to his consideration of silk handlers' disease. To students of occupational diseases, it will be interesting as evidence of an early study of those conditions which develop in workers in various trades.

A. E. SHIPLEY.

Lincoln and the Doctors

LINCOLN AND THE DOCTORS. A Medical Narrative of the Life of Abraham Lincoln. By Milton H. Shutes, M.D. New York, The Pioneer Press, 1933. 152 pages illustrated. 8vo.

This book is really a biography of Lincoln, whom the author designates as "America's greatest son." The information here assembled shows the subject to have been of an highly neurotic temperament. The author says: "Lincoln was a psychoneurotic, and that phase of his character went into the mosaic of his intensely interesting personality and was an indissoluble part of his greatness."

There is much Civil War history, not the least interesting of which is the failure of the military organization to care adequately for the physical well being of the soldiers. This has characterized all of our wars, and has always called for civilian help.

The book gives an interesting account of Lincoln's illnesses and the doctors with whom he had to do. The information thrown upon Lincoln's neurotic history is illuminating. It all shows the changes of our political system. The power for weal or woe, vested in the President, places the public at the mercy of the man occupying this position. The autocratic nature of the power of the President quite nullifies our theory of democracy, and the possibilities of this authority keeps us always in uncertainty and doubt.

J. P. WARBASES.

Accounting and Business Procedure for Hospitals

ACCOUNTING AND BUSINESS PROCEDURE FOR HOSPITALS. Prepared by New York Conference on Hospital Accounting. Herbert R. Sands, Consulting Accountant. New York, United Hospital Fund of New York, [c. 1933.] 195 pages. 8vo. Cloth, \$2.50.

The text covers a wide variety of all phases of hospital business methods such as budgets, allocation of funds, accounting, unit costs, statistics of all types, and the procedures to follow in utilizing this material.

From the point of view of the hospital executive this volume should be valuable as a guide to better business methods out of which should come a clearer understanding of the place of the hospital in its ability to meet the needs of the community it serves and to which it appeals for support in its philanthropic work.

From the viewpoint of the medical profession, the book should serve a useful purpose in guiding the staff member in understanding the complexity surrounding the methods essential in operating what has become a business venture of large scope.

If the hospital administrator does not know his costs and the physician only thinks of charges, the community will never understand its part and will continue to be asked to make up deficits in the name of sweet charity instead of knowing how much money is required to pay for the needed service that is to be rendered.

A. N. THOMSON.

The International Medical Annual

THE INTERNATIONAL MEDICAL ANNUAL. A Year Book of Treatment and Practitioner's Index. Edited by Carey F. Coombs, M. D., and A. Rendle Short, M. D. Fifty-first Year, 1933. Baltimore, William Wood & Company, 1933. 572 pages, illustrated. 8vo. Cloth, \$6.00.

As usual this annual furnishes an excellent review of the

year's work. Only a few topics of interest may be noted. Recent work on the etiology of the anemias has shown that there is an increase in the incidence of achlorhydria in normal people of various ages. Of itself it is said to produce no symptoms and call for no treatment. Various factors of interest in connection with pernicious and hypochromic anemia are presented. The probability that Vitamin B is in some way closely related to the antianemic factor is noted. Fish liver and its extract have been found as efficient as mammalian liver in inducing and maintaining a remission in pernicious anemia. It is claimed that in pernicious anemia with subacute combined degeneration of the cord, where liver does not improve the established lesions that large doses of iron will do so.

In the treatment of heart disease, digitalis has been more and more recognized as of value in cases other than auricular fibrillation. Attacks of paroxysmal nocturnal dyspnea and ventricular failure have been found to respond to digitalis in increasing numbers. The value of urea as a diuretic and the harmlessness of its continued use is noted. Campbell and Shackle found that of 291 cases of aortic valvular disease, in 200 the condition was due to rheumatism, syphilis 55, atheroma 20 and other cause 21.

In the treatment of diabetes the tendency toward a higher carbohydrate diet continues and this is discussed by various writers. The middle course with 100 to 150 grams of carbohydrate seems to be the most sensible at present except perhaps where 3 doses of insulin will have to be given anyway, although it is claimed that a considerable substitution of carbohydrate for fat does not increase the insulin requirement. J. A. Nixon allows his patients to choose what they consider their normal diet, omitting articles which contain sugar as such. The diet is estimated, discrepancies corrected and sufficient insulin given to balance it. This does work well and gives the patient about what he wants. The bad effect of insulin hypoglycemia on the heart as shown by Strouse and others is noted.

In the syndrome of Pituitary Basophilism described by Cushing, 6 of 8 patients were shown to have pituitary adenomas of the "basophil" type and the symptoms were adiposity, genital dystrophy, high blood pressure, polycythemia, and hirsuties of the male type.

There are many other reviews of interest, surgical as well as medical, in this valuable reference book.

W. E. MCCOLLOM.

BOOKS RECEIVED

Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

GONORRHOE DER WEIBLICHEN GENITALORGANE. By Dr. Robert Joachimovits. Wien, Wilhelm Maudrich, 1933. 231 pages, illustrated. 8vo. Cloth, RM. 18.

THE ARCHES OF THE YEARS. By Halliday Sutherland, M. D. New York, William Morrow & Company, 1933. 293 pages. 8vo. Cloth, \$6.00.

THE SURGICAL CLINICS OF NORTH AMERICA. Vol. 13, No. 3. (Lahey Clinic Number) June 1933. Issued serially, one number every other month by the W. B. Saunders Company, Philadelphia and London. Per Clinic Year (6 nos.). Paper, \$12.00. Cloth, \$16.00.

LES SOURCES DE LA VIE. By Dr. Serge Voronoff. Paris, Fasquelle Editeurs, [c. 1933.] 184 pages, illustrated. 12mo. Paper, 15 francs.

THE CONTROL OF FOOTBALL INJURIES. By Marvin A. Stevens, M. D. and Winthrop M. Phelps, M. D. New York, A. S. Barnes & Company, 1933. 241 pages, illustrated. 8vo. Cloth, \$3.00.

FRACTURES. By Paul B. Magnuson, M. D. Philadelphia, J. B. Lippincott Company, [c. 1933.] 466 pages, illustrated. 8vo. Cloth, \$5.00.

CHRONIC ILLNESS IN NEW YORK CITY. By Mary C. Jarrett. Two volumes. New York. Published for The Welfare Council of New

York City by the Columbia University Press, 1933. Total of 545 pages. 8vo. Cloth, \$5.00.

HISTOPATHOLOGY OF THE PERIPHERAL AND CENTRAL NERVOUS SYSTEMS. By George B. Hassin, M. D. Baltimore, William Wood & Company, 1933. 491 pages, illustrated. 8vo. Cloth, \$6.00.

FRONTIERS OF MEDICINE. By Morris Fishbein, M. D. Baltimore, Williams & Wilkins Company, 1933. 207 pages. Cloth, \$1.00. (Century of Progress Series.)

OBSTETRICS AND GYNECOLOGY. Edited by Arthur H. Curtis, M. D. Volume 2. Pathology of Labor and of the Puerperium, Operative Obstetrics, Infectious Processes, etc. (To be published in three volumes and a separate desk index.) Philadelphia, W. B. Saunders Company, 1933. 1135 pages, illustrated. 8vo. Cloth, price per set, \$35.00.

GIANTS AND DWARFS. A Study of the Anterior Lobe of the Hypophysis. By Palmer Howard Putcher. Cambridge, Mass., Harvard University Press, 1933. 71 pages, illustrated. 12mo. Cloth, \$1.25.

ACCOUNTING AND BUSINESS PROCEDURE FOR HOSPITALS. Prepared by New York Conference on Hospital Accounting. Herbert R. Sands, Consulting Accountant. New York, United Hospital Fund of New York, [c. 1933.] 195 pages. 8vo. Cloth, \$2.50.

be toxic or ineffective, smaller doses of this drug in conjunction with Metrazol often proved of value in obtaining the desired results. Where digitalis is not tolerated at all, Metrazol alone has been used with success. In cases of acute digitalis poisoning Metrazol has proved of definite value. In acute cardiovascular collapse the use of Metrazol is especially beneficial."

Information and a trial quantity of this circulatory and respiratory stimulant, Metrazol (Council Accepted) may be obtained, upon request to the manufacturers, Bilhuber-Knoll Corp., 154 Ogden Ave., Jersey City, N. J.

Dr. Keith Kahn an Equity Surgeon

Dr. Keith Kahn, surgical director of the Keith Hospital of Plastic Surgery, in the Hotel Taft, New York City, was elected an Honorary Physician of the Actors' Equity Association at the regular meeting of the Equity Council, on July 11.

Dr. Kahn is also Chief of Plastic Surgery at Gouverneur Hospital, New York.

Congestive Heart Failure

Before the Cincinnati Heart Council, Dr. B. A. Schwartz reported on a series of 37 cases of congestive heart failure treated with digitalis and Metrazol (Ohio State Med. Jr., May, 1933, Pg. 308-310).

The author made use of the circulatory stimulant Metrazol in place of, or in conjunction with, digitalis in a selected group of 37 cases of chronic congestive heart failure in which digitalis did not prove effective or where the patient's gastro-intestinal or even nervous system was partially or wholly intolerant to this drug.

Case histories are given and many references made to reports from cardiologists and a comprehensive bibliography is included.

In conclusion Dr. Schwartz writes: "Our clinical experience with digitalis and Metrazol in this group of cardiac patients with congestive failure, leads us to conclude that there is a definite synergistic relation between the two stimulants. In those cases where normal doses of digitalis had been found to

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ethmoid and sphenoid cells lying near the optic nerve, the incidence of visual disturbances was very small. For of 225 cases of retrobulbar neuritis at the Clinic in which the etiology was determined, only one was attributed to nasal sinus disease. The most frequent cause of retrobulbar neuritis in this series was multiple sclerosis (155 cases). In cases where retrobulbar neuritis is due to multiple sclerosis or to some other cause for which no specific remedy or operative procedure can be employed, the author has found that the ocular symptoms are best relieved by foreign protein therapy, for which he uses triple typhoid vaccine. He is of the opinion that where improvement in retrobulbar neuritis does follow operation on the nasal sinuses, as it undoubtedly does in some cases, this is not due to drainage of the sinuses, but to hyperemia induced by packing and the reaction from the operation and the inoculation by absorption of blood—the same factors as with foreign protein therapy. The fact that recurrences are frequent is due to the fact that the hyperemia is not maintained for a sufficient length of time. The author is of the opinion that unless there is definite suppurative disease of the nasal sinuses, operation is not indicated for the relief of retrobulbar neuritis. If such suppurative disease is present, operation is indicated for relief of the local condition, but other measures should be used for the treatment of the retrobulbar neuritis.

Ocular Disturbances in Epidemic Encephalitis

C. P. Clark (*American Journal of Ophthalmology*, 16:606, July, 1933) discusses the ocular disturbances of epidemic encephalitis with special consideration of the chronic stage of the disease, based on his own observations at the Central State Hospital, Indianapolis, Ind., and a review of the literature. In the acute stage, ophthalmoplegia of various types or spasm of one muscle or muscle group is the most usual ocular manifestation with diplopia and ptosis the most common symptoms; nystagmus and fundus disturbances are rare. In the chronic stage, ptosis may be unilateral or bilateral, but it is rarely permanent; if ptosis is present there is usually a paralysis of some of the other muscles innervated by the third cranial nerve. Paralysis of a single ocular muscle is rare; if it does occur, the internal rectus is most frequently involved; paralysis of accommodation has also been noted; a case of the latter is reported. The most characteristic ocular symptom of chronic epidemic encephalitis is the oculogyric crisis, due to spasm of groups of muscles. This symptom is peculiar to postencephalitic Parkinsonism. The paroxysmal spasmodic conjugate deviations of the eyes may occur in any direction of the gaze; the occurrence of these oculogyric crises indicates that the disease is still active. Two cases observed by the author are reported. Disturbances of the disjunctive movements are rare, but if present cause annoying diplopia. Nystagmus is more frequently a symptom of the chronic phase of the disease than of the acute attack. Twitching or fluttering movements of the eyelids are often seen in chronic encephalitis, frequently in association with the oculogyric crises. The Argyll-Robertson pupil and alterations in the size and shape of the pupil are found in cases of chronic encephalitis. Changes in the optic nerve and fundus are scarcely ever present unless there has been some form of optic neuritis in the acute stage—a rare occurrence. Ocular symptoms of "a psychic character"—photophobia, blepharospasm, and ocular pain after any kind of eye work—may be very annoying in cases of chronic encephalitis. Since stramonium has been found to be of value in the control of symptoms of post-encephalitic Parkinsonism, and is given in large doses, it must be remembered that certain ocular symptoms may be induced by this drug—enlargement of the pupils due to paralysis of the constrictor muscles and paralysis of accommodation. These can be counteracted by the local use of miotic drugs and suitable lens correction.

Size of Pupil as a Possible Index of Ocular Fatigue

M. Luckiesh and F. K. Moss (*American Journal of Ophthalmology*, 16:393, May, 1933) report studies at the Lighting Research Laboratory of the General Electric Company in Cleveland, Ohio. The size of the pupils was measured by a pupillometer designed by one of the authors, in nine subjects engaged in close visual work, at the beginning and at the end of each day's work. All measurements were made in a room uniformly illuminated and with a constant state of accommodation. The average of the measurement showed that the pupil dilated 6 per cent in diameter or 13 per cent in area during the course of the day; this is significant as it is more than six times the probable error in measurements. All subjects showed a dilatation of the pupil during the day; and it was observed that when the subjects complained that their eyes "felt tired,"

the dilatation of the pupil was marked at the end of the day's work as compared with the morning measurement. A further analysis of the data obtained showed that the size of the pupil not only increased during the day, but also increased, altogether slowly and somewhat irregularly, as the week progressed from Monday to the end of the working week on Friday afternoon. This would indicate that the effect of the day's use of the eyes is not entirely overcome by relaxation at night, and that longer rest periods are required. These studies indicate that ocular fatigue "is apparently due to muscular rather than retinal fatigue." A possible explanation, the authors believe, is that the continuous functioning of the muscles of the iris results in fatigue of these muscles, which is "an indirect measure of general ocular fatigue."

Primary Diseases of the Retinal Blood Vessels

W. R. Buffington (*Southern Medical Journal*, 26:481, June, 1933) states that he has recently observed a case in a colleague "just past middle age" who has massive retinal and visual hemorrhages in one eye and multiple aneurysms of the retinal arteries in the other. Repeated physical examinations showed no systemic disease to account for these changes in the retinal blood vessels; the patient's vascular system "was not sclerosed beyond his age." A search of the literature and a review of his own cases led the author to the conclusion that primary diseases of the retinal arteries do exist, without any general vascular sclerosis, albuminuria, diabetes or syphilis. Such primary diseases include: Angiospasm, or spasm of the retinal arteries; aneurysms of the retinal blood vessels; recurrent retinal and vitreous hemorrhages of unknown cause (Eales' disease); vascular changes due to indirect injury known as traumatic angiopathic retinitis or Putcher's disease; vascular changes due to direct injury; retinitis externa with massive exudate, or Coats' disease. In addition to the case noted above, the author has seen one woman with recurrent intra-ocular hemorrhages. He also reports 2 cases of vascular changes resulting from direct injury to the eye, and 3 cases of Coats' disease. Except for the cases due to direct or indirect injury, the causes of these various types of primary disease of the retinal blood vessels have not been discovered.

Ocular Symptoms in Leukemia

Beauvieux and Bessière (*Archives d'Ophthalmologie*, 50:377, June, 1933) report 2 unusual ocular symptoms in leukemia. In the first case swelling of the eyelids, followed by exophthalmos when the leukemic process involved the orbit, occurred as the initial symptom of an acute leukemia. Rarely such involvement of the eyelids has been observed in chronic leukemia, but not previously in acute leukemia. In the second case of chronic myeloid leukemia, there were recurrent retinal hemorrhages, resulting in the formation of cicatricial tracts having the appearance of proliferative retinitis (Manz). No similar case of retinal hemorrhages in leukemia was found reported elsewhere.

Medicinal Research at Mellon Institute

Since 1922 the firm of E. R. Squibb & Sons, of New York, N. Y., has been sustaining research at Mellon Institute, Pittsburgh, Pa. For the most part, this investigational work has been concerned with the development of new medicinal preparations; in addition, the Fellowship has been collaborating with specialists on the faculty of the School of Dentistry of the University of Pittsburgh in studies of dental therapeutic agents.

According to an announcement of Mellon Institute, the Squibb Fellowship has lately been renewed for the year July 1, 1933, to July 1, 1934, to continue this program of pharmaceutical research, and Dr. Harold William Coles has been appointed to the incumbency of this Fellowship. Dr. Coles, who received his professional education at Syracuse University (B.S., 1923) and at the Iowa State College (M.S., 1926; Ph.D., 1927), is a specialist in the pharmacology and physiology of local anesthetics. He has also contributed to the literature of the chemistry and fermentation of sugar derivatives, organic antimony compounds, and ephedrine intermediates. Prior to joining Mellon Institute, he was for six years engaged in organic research in the pharmaceutical field.

In connection with the investigations of the Squibb Fellowship, as they will relate to the field of dentistry, Dr. H. Edmund Friesell, Dean, School of Dentistry, University of Pittsburgh, will continue to act as one of the Fellowship advisers. Dr. Friesell has served in this positional capacity for over ten years, participating actively in the Fellowship's studies in the province of fundamental dental medicine.

As a preventive measure when exposed to poison ivy, thorough washing with a thick lather from ordinary kitchen soap. Repeat several times and rinse thoroughly each time with hot water.

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